

Birds
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BEING THE JOURNAL OF THE
AVICULTURAL SOCIETY FOR
THE STUDY OF BRITISH AND
FOREIGN BIRDS IN FREEDOM
AND IN CAPTIVITY

EDITED BY

PHYLLIS BARCLAY-SMITH, F.Z.S.

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- CLEMO, J. ; 5 Symonds' Terrace, Redruth, Cornwall. (Oct., 1927.)
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- FLOWER, Major STANLEY S. ; Old House, Park Road, Tring, Herts. (Dec., 1940.)
- FLOYD, J. F. M. ; address unknown. (Jan., 1935.)
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- GARDNER, ERIC ; (Executive Engineer) General Offices B.B. & C.I. Railway, Churchgate, Bombay, India. (March, 1935.)
- GARRETT, M. R. ; Forestry Department, Launceston, Tasmania. (June, 1934.)
- GARRETT, ROBERT ; Ballynichol, Comber, Co. Down. (April, 1933.)
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- GLOVER, Percy H., F.Z.S. ; Broadlands, Fareham, Hants. (June, 1931.)
- GODDARD, H. E. ; Lerwick, Bannerdown, Batheaston, Somerset. (Feb., 1899.)
- GODDARD, Mrs. ; The Cottage, Buckland, Faringdon, Berks. (Feb., 1923.)
- GOLDER, H. G., F.Z.S. ; Hon. Secretary and Treasurer, Norwich Alliance All. England C.B.d., 37 Crown Road, Norwich. (June, 1931.)
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- GOODHEART, L. McCORMICK ; Address unknown.
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- GURNEY, Miss DIANA ; North Runciton Hall, King's Lynn. (July, 1927.)
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- HADDEN, NORMAN G. ; Underway, West Porlock, Somerset. (Jan., 1939.)
- HAGGARD, V. D. ; Zoological Gardens, Adelaide, South Australia. (June, 1941.)
- HAINE, Dr. J. E., 3 Culver House, Boxgrove Road, Guildford. (April, 1935.)
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- HARVARD UNIVERSITY ; Museum of Comparative Zoology, Cambridge, Mass., U.S.A.
- HAWKE, THE HON. MARY ; Mill Lands, Henfield, Sussex. (Rejoined.)
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- HILL, Professor W. C. OSMAN, M.D. ; Medical College, Ceylon. (Dec., 1939.)
- HIRST, ALBERT ; 10 Talbot Avenue, Egerton, Huddersfield. (July, 1923.)
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- *HOLLOND, Miss GLADYS M. B. ; 5 Norfolk Crescent, Hyde Park, W. 2. (March, 1930.)
- HOLT, Miss ESTHER ; Axholme, Noctorum, Birkenhead, Cheshire. (Jan., 1934.)
- HONE, Capt. T. N. ; Boshny House, Ledbury, Herefordshire. (Nov., 1927.)
- HOPKINSON, EMILIUS, C.M.G., M.A., M.B.Oxon., D.S.O., F.Z.S. ; Wynstay, Balcombe, Sussex. (Oct., 1906.)
- HORNE, DOUGLAS PERCY ; Pinefield, Church Road, Addlestone, Surrey. (Sept., 1928.)

- HORNER, Miss D. ; Riccall, York. (Aug., 1931.)
- HOUSDEN, Major E. F., M.C., T.D. ; Hillside, Harrow-on-the-Hill, N. (Jan., 1934.)
- HOUSDEN, JAMES B. ; North Forbury, Church Street, Leominster, Herefordshire. (*Orig. Mem.*)
- HOUSDEN, Dr. LESLIE ; Caldecotts, Church Square, Basingstoke, Hants. (March, 1933.)
- HUGHESDON, V. C. ; Hughesdon and Davis (Solicitors), 16 Barrack Street, Sydney, N.S.W., Australia. (Oct., 1940.)
- HUMPHRIES, WALTER JOHN ; 32 Cedric Road, Crumpsall, Manchester, 8. (Feb., 1931.)
- HURLBURT, Dr. W. E. ; Vineland, Ontario, Canada. (June, 1939.)
- HUTCHINSON, Miss ALICE ; address unknown. (Aug., 1907.)
- ILES, GERALD ; Zoological Gardens, Belle Vue, Manchester, 12. (Jan., 1940.)
- INDGE, H. J. ; Trimstone, Thorpe, Nr. Chertsey, Surrey. (June, 1940.)
- ISENBERG, A. H. ; Box 88, 647 Runnymede Street East, Palo Alto, California, U.S.A. (Aug., 1926.)
- JARDIN ZOOLOGICO DE BUENOS AIRES ; Buenos Aires, Argentine. (Feb., 1940.)
- JARVIS, Miss I. F. ; The Old Manor, Salisbury. (Aug., 1930.)
- JERVIS, Hon. Mrs. ; Pitminster Lodge, Taunton, Somerset. (Feb., 1936.)
- JOHNSTON, ROBERT PERCY ; West House, Wigton, Cumberland. (March, 1925.)
- JONES, C. BUCKINGHAM ; Dibrugarh, Assam. (Feb., 1938.)
- JONES, F. T. ; Lower Peover, Cheshire. (Oct., 1933.)
- JONES, S. B. ; 265 Northway, Maghull, Nr. Liverpool. (Sept., 1934.)
- JONES, T. J. ALEX. ; Brynley, 5 Fields Park Road, Newport, Mon. (Oct., 1940.)
- JONES, W. A. ; 54 Stockwell Park Road, S.W. 9. (Feb., 1933.)
- JORGENSEN, Mrs. ; Sefton, Bickley, Kent. (July, 1939.)
- KEATOR, BEVERLEY, R.F.D. ; 2 Westport, Conn., U.S.A. (June, 1924.)
- KEMP, ROBERT ; 5 Rose Hill, Lostwithiel, Cornwall. (March, 1926.)
- KERR, J. ERNEST ; Harviestoun, Dollar, Scotland. (March, 1927.)
- KEWLEY, Mrs. M. A. ; Old Court House, Whitchurch, Aylesbury, Bucks. (Sept., 1910.)
- KING, ALFRED ; "Mirfield," 8 Inglewhite Crescent, Wigan. (Dec., 1940.)
- KING, HAROLD ; 41 Compton Road, Sherwood, Nottingham. (Rejoined.)
- KINSEY, ERIC C. ; c/o Garnett Young and Co., 390 Fourth Street, San Francisco, Calif., U.S.A. (Aug., 1936.)
- KNOBEL, Miss E. MAUD, F.Z.S. ; Lindeth Lodge, Peaslake, Surrey. (Aug., 1916.) (*Hon. Mem. Hon. Secretary and Treasurer.*)
- KREYDT, ROBERT V. ; 1205 Putnam Street, Olean, N.Y., U.S.A. (Jan., 1942.)
- KRUG, EDWARD A. ; 300 West Adams Street, Chicago, Ill., U.S.A. (March, 1940.)
- KUNTZ, P. ; 289 Edmonton Street, Winnipeg, Manitoba, Canada. (May, 1930.)
- LAIDLAY, J. C. ; Lindores, Fife, Scotland. (April, 1929.)
- LAKE, GEORGE D. ; Audrey, Burghfield Common, Mortimer, Berks. (Sept., 1937.)
- LAMBERT, Miss LESLEY DOUGLAS ; Beeston Hill, Leeds. (Jan., 1937.)

- LANGHAM, Sir CHARLES, Bart. ; Tempo Manor, Co. Fermanagh, Ireland. (July, 1932.)
- LAW, Dr. SATYA CHURN, F.Z.S., M.B.O.U., M.A., B.L., PH.D. ; 50 Kailas Bose Street, Calcutta. (1919.)
- LAWRENCE, W. H. ; 6559 Yew Street, Vancouver, B.C., Canada. (Dec., 1939.)
- LAX, J. M. S. ; Southfield, Crook, Co. Durham. (Jan., 1930.)
- LEACH, C. F. ; Woodview, Park Road, Ashted, Surrey. (June, 1914.)
- LEWIS, J. SPEDAN, F.Z.S. ; Leckford Abbess, Stockbridge, Hants. (Sept., 1924.)
- LIVERMORE, JOHN W. ; 130 East End Avenue, New York City, U.S.A. (June, 1941.)
- LODGE, GEORGE E., F.Z.S., Hawkhouse, Park Road, Camberley, Surrey. (May, 1923.)
- LOUWMAN, P. W. ; 4 Teylingerhorstlaan, Wassenaar, Holland. (Aug., 1936.)
- *LOW, Dr. G. CARMICHAEL ; 7 Kent House, Kensington Court, W. 8. (May, 1939.)
- LOWE, Rev. J. R. ; The Vicarage, Coln St. Aldwyn, Fairford, Glos. (June 1927.)
- LUPTON, Miss E. M. ; Beechwood, Elmete Lane, Roundhay, Leeds. (Aug., 1933.)
- LYON, Capt. the Hon. MICHAEL ; Glamis Castle, Glamis, Forfarshire. (May, 1927.)
- MCCANCE, DAVID ; Strand Town, Belfast. (July, 1932.)
- MCDOWALL, KENNETH OF LOGAN ; Port Logan, Wigtownshire. (Sept., 1938.)
- McGILL UNIVERSITY ; Montreal, Canada.
- McLINTOCK, Miss M. H. ; The Grove, Catton Grove Road, Norwich. (July, 1927.)
- McMILLAN, Dr. A. ; New Romney, Kent. (March, 1930.)
- MACKLIN, C. H., M.R.C.S., L.R.C.P., F.Z.S. ; 23 Church Street, Amptill, Beds. (May, 1923.)
- MAIRAUX, E. (Ingénieur Agronome I.A.G.) ; 41 Rue de la Ruche, Bruxelles, Belgium. (July, 1929.)
- MALISOUX, IVAN ; Beez, Namur, Belgium. (Feb., 1936.)
- MARSH, E. G. ; Stoke Bishop, Drake's Avenue, Exmouth. (Sept., 1935.)
- MARSHALL, E. ; Hillside, Cadewell Lane, Shiphay, Torquay. (Oct., 1941.)
- MARSHALL, L. F. ; 65 Fitzroy Avenue, Harborne, Birmingham 17. (Sept., 1937.)
- MARTEN, L. H., O.B.E., F.Z.S. ; Tilton, near Battle, Sussex. (June, 1930.)
- MARTIN, A. ; 27 Yoxall Road, Shirley, Nr. Birmingham. (Oct., 1930.)
- MARTIN, H. C. ; Las Cãnas, 44b Coper's Cope Road, Beckenham, Kent. (Jan., 1897.)
- MASON, Miss EVA INGLIS ; Peppercorn Cottage, Burton, Christchurch, Hants. (Aug., 1934.)
- MATTHEWS, Mrs. W. M. ; Sarsdenfield, Camberley, Surrey. (May, 1935.)
- MAXWELL, C. T. ; 1 Shardcroft Avenue, Herne Hill, S.E. 24. (Dec., 1908.)
- MAXWELL, P. H. ; Ebberley Hill, St. Giles, near Torrington, N. Devon. (Oct., 1929.)
- MAXWELL-GAVIN ; Monreith, Whauphill, Wigtownshire. (Aug., 1941.)
- *MAXWELL-JACKSON, Miss M. ; Percy House, Scotton, Knaresborough, Yorks. (Jan., 1913.)

- MAYER, F. W. SHAW ; Wulfruna, 88 Concord Road, Homebush, Sydney, Australia. (Aug., 1922.)
- MEESER, F. C. S. ; P.O. Box 4993, Coronation Building, 23 Simonds Street, Johannesburg, South Africa. (July, 1937.)
- MERTENS, MARCEL (Ingenieur) ; Hotel du Commerce, Saint Laurent du Sape, Ordèche, France. (April, 1938.)
- MEYER, JOHN D. ; c/o Berol Lodge, Chappaqua, N.Y., U.S.A. (Sept., 1938.)
- MILLIGAN, H. ; Upper Manor Farm, Leckford, Stockbridge, Hants. (March, 1937.)
- MOODY, A. F. ; Lilford, Oundle, Peterborough. (July, 1926.)
- MOORE, ROBERT T. ; RR. No. 1, Box 28a, Pasadena, California, U.S.A. (July, 1928.)
- MORRISON, A. ; St. Mary's Ridgway Road, Farnham, Surrey. (Jan., 1932.)
- MORTIMER, M. J. ; Elmhurst School, Camberley, Surrey. (Sept., 1939.)
- MOTT, B. ; 11 Wheelays Road, Edgbaston, Birmingham. (Rejoined.)
- MOUNTAIN, Capt. WALTON ; Groombridge Place, Kent. (Feb., 1923.)
- MURPHY, JOHN (District Commissioner) ; Kabarnet, via Eldama Ravine, Kenya Colony. (Oct., 1932.)
- NEWMAN, T. H., F.Z.S., M.B.O.U. ; Verulam, 46 Forty Avenue, Wembley Park, Middlesex. (May, 1900.) (*Hon. Mem.*)
- NEWMARCH, C. T., F.Z.S. ; Gamage's Ltd., Holborn, W.C. (Aug., 1915.)
- NICOL, HAMISH, F.R.C.S., F.Z.S. ; Hillside, Christchurch Road, Hampstead, N.W. 3. (Jan., 1926.)
- NIGHTINGALE, Capt. F. B., F.R.I.B.A. ; 47 West Side, Wandsworth Common, S.W. 18. (Dec., 1933.)
- NORCROSS, HERBERT ; Normanhurst, 22 Mount Road, Middleton, Lancs. (March, 1930.)
- NORDHOFF, CHARLES B. ; Papeete, Tahiti, French Oceania. (Aug., 1937.)
- NORRIS, KENNETH A. ; Elmstone, Highfield Road, Purley, Surrey. (June, 1939.)
- OSTREHAN, CLEMENT ; Kington Rectory, Worcester. (Jan., 1928.)
- PAM, Major ALBERT, F.Z.S. ; Wormleybury, Broxbourne, Herts. (Jan., 1906.)
- PAPE, Mrs. A. M. ; Forest Lodge, Binfield, Berks. (Oct., 1937.)
- PARTRIDGE, W. R., F.Z.S. ; Larches, near Fladbury, Pershore, Worcestershire. (April, 1934.)
- PEARSE, Mrs. ; Channel View, Bembridge, Isle of Wight. (Rejoined.)
- PEAT, RODERICK M. ; 11 Ironmonger Lane, London, E.C. 2. (June, 1940.)
- PHILLIPS, C. P. ; Swans Nest, Dorchester, Oxford. (Nov., 1940.)
- PHIPPS, Mrs. ; 14 Milner Crescent, Kensington, Johannesburg, South Africa. (Jan., 1935.)
- PICKERING, ROWLAND H. E. U. ; Thunder Hall, Ware, Herts. (Feb., 1936.)
- PICKFORD, RANDOLPH JOHN ; Etherley Lodge, near Bishop Auckland. (Feb., 1903.)
- PITT, W. S. ; Wildwood, Silverdale Avenue, Walton-on-Thames, Surrey. (March, 1934.)
- PLATH, KARL ; 2847 Giddings Street, Chicago, U.S.A. (July, 1924.)
- POLTIMORE, Lady ; Court Hall, North Molton. (Jan., 1926.)
- POPHAM, Mrs. LEYBOURNE ; Hunstrete House, Pensford, near Bristol. (July, 1937.)

- PORTER, SYDNEY, F.Z.S. ; The White Gates, Stenson Road, Derby. (April, 1920.)
- POTTER, BERNARD E., M.B., M.R.C.S., L.R.C.P., F.Z.S. ; 2 Harley Street, W. 1. (March, 1914.)
- POTTER, W. H. ; Whetherill, Fitzillian Avenue, Harold Wood, Essex. (July, 1926.)
- PRINCETON UNIVERSITY LIBRARY ; U.S.A.
- PUDDLE, F. C., V.M.H. ; Bodnant Gardens, Tal-y-Cafn, Denbighshire. (May, 1940.)
- PYCRAFT, W. P., A.L.S., F.Z.S., M.B.O.U., etc. ; Little Paddock, Longcross, near Chertsey. (Nov., 1904.) (*Hon. Mem.*)
- PYE, Miss L. ; High Street, Haslington, Crewe. (March, 1938.)
- QUEBEC ZOOLOGICAL GARDEN ; Charlesbourg, P.Q., Canada. (Nov., 1940.)
- QUINCEY, R. S. DE Q. ; The Vern, Bodenham, Hereford. (April, 1913.)
- RAMPTON, A. ; South Lake, Woodley, Berks. (Dec., 1935.)
- RAVEN, WILLIAM HENRY ; 29 Cavendish Road, E. ; The Park, Nottingham. (Dec., 1939.)
- REVENTLOW, AXEL ; Inspektar, Zoological Garden, Kobenhavn F., Denmark (Jan., 1928.)
- RIPLEY, S. DILLON ; Litchfield, Connecticut, U.S.A. (Sept., 1937.)
- RISDON, D. H. S. ; "Remura," 130 Green Lane, Northwood, Middlesex. (Jan., 1934.)
- ROBINSON, Mrs. T. E. ; Cliff Hotel, San Francisco, Calif., U.S.A. (June, 1935.)
- ROGERS, Miss MILLICENT ; Ingham New Hall, Ingham, Norwich. (Oct., 1936.)
- ROWE, ROY L. ; 624 Dorchester Road, San Mateo, California, U.S.A. (Nov., 1937.)
- ROY, ANANTO KUMAR ; 59 Upper Chitpore Road, Calcutta, India. (March 1934.)
- RUDKIN, FRANCIS.H. ; R.I., Box 31, Fillmore, California, U.S.A. (May, 1902.)
- RUMSEY, LACY ; 23 Rua de Serpa Pinto, Villa Nova de Gaya, Oporto, Portugal. (April, 1919.)
- RYAN, Sir G. E. ; Address unknown. (June, 1931.)
- SCHMIDT, PAUL ; Senta, Yugoslavia. (March, 1934.)
- SCHUYL, D. G. ; Kralingscheweg 332, Rotterdam, Holland. (Jan., 1914.)
- SCOTT, A. H. ; Blissford Pool, Fordingbridge, (March, 1934.)
- SCOTT-HOPKINS, Capt. C. ; Low Hall, Kirby Moorside, Yorks. (July, 1928.)
- SEPPINGS, Lieut.-Col. J. W. H., F.Z.S. ; c/o Lloyd's Bank, Ltd., Cox & King's Branch (G.3), 6 Pall Mall, London, S.W. 1. (Sept., 1907.)
- SETH-SMITH, DAVID, F.Z.S., M.B.O.U. ; "Brabourne," Poyle Road, Guildford, Surrey. (Dec., 1894.) (*Hon. Mem.*)
- SHAKESPEARE, WALTER ; Sefton, St. George's Hill, Weybridge. (Aug., 1926.)
- SHAND, Dr. W. PATERSON ; 10 Wilson Street, Derby. (Dec., 1940.)
- SHEARING, A. P. ; The Aviaries, Foxwarren Park, Cobham, Surrey. (Dec., 1931.)
- SHEFFIELD CITY LIBRARIAN, Central Library, Sheffield. (June, 1941.)
- SHERBROOK, WILLIAM ; The Old Vicarage, Tadworth, Surrey. (April, 1931.)
- SHERRIFF, A., F.Z.S. ; Edge Hill, 8 Ranulf Road, N.W. 2. (March, 1923.)

- SIBLEY, C. L. ; Sunnyfields Farm, Wallingford, Conn., U.S.A. (Jan., 1934.)
- SILVER, ALLEN, F.Z.S. ; Birdsacre, Llantarnam, Mon.
- SIMPSON, H. W. ; 6 Barry Road, Stonebridge, Willesden, N.W. 10. (Nov., 1924.)
- SIMPSON, Mrs. M. K. M. ; 98 Pittencreeff Street, Dunfermline, Fife. (May, 1937.)
- SIMSON, Capt. RUPERT, O.B.E. ; The New Inn, Kidmore End, nr. Reading. (July, 1932.)
- SINCLAIR, O. E. ; 60 South Ridge Road, Durban, Natal, South Africa. (April, 1939.)
- SLADE, G. J. ; Shenley, 21 Wilton Crescent, Southampton. (Feb., 1915.)
- SMITH, ERNEST WILFORD ; 15 Kingsway Road, Leicester. (Oct., 1941.)
- SMITH, PAUL H. ; 11 Parkhill Road, Hampstead, N.W. 3. (Aug., 1941.)
- SMITH, W. PROCTOR, F.Z.S. ; Bexton House, Knutsford, Cheshire. (Nov., 1917.)
- SMITH, Mrs. WIKOFF ; Morris Avenue, Bryn Mawr, Penna, U.S.A. (Jan., 1935.)
- SOUTHOFF, GEORGE DE, C.M.Z.S. ; 9-11 Via S. Spirito, Florence, Italy. (1921.)
(*Hon. Mem.*)
- SOUTHPORT CORPORATION, CURATOR OF ; Hesketh Park, Southport. (Jan., 1904.)
- SPENCER, HENRY ; Worton Askrigg, Yorkshire. (Sept., 1928.)
- SPINKS, M. M. ; Tetterstones, Doddington Ridge, near Wellingborough. (Aug., 1940.)
- SPRAWSON, Professor EVELYN, M.C., D.Sc., M.R.C.S., F.Z.S. ; Cranford, Welcomes Road, Kenley, Surrey. (June, 1923.)
- SPURWAY, N. B. ; Delamere, 325 London Road, Leicester. (April, 1923.)
- SQUIRE, E. O. ; Basmead Manor, St. Neots, Hunts. (June, 1939.)
- STARK, J. ; Woods Cottage, Haddington, Scotland. (Jan., 1924.)
- STEINBECK, J. W. ; P.O. Box 832, Concord, California, U.S.A. (March, 1939.)
- STEYNE, ALAN N. ; American Embassy, 1 Grosvenor Square, W. 1. (Sept., 1932.)
- STIGAND, Mrs. PEARSALL ; Antica Casa Colonica, 19 Via Augusto Baldesi, San Gervasio, Florence, Italy. (Dec., 1932.)
- STOKES, Capt. H. S., F.Z.S., M.B.O.U., M.C. ; Longdon, Rugeley, Staffordshire. (Oct., 1922.)
- SUGGITT, ROBERT ; Suggitt's Lane, Cleethorpes, Grimsby. (Dec., 1903.)
- SUTTON, PETER ; Speedwell, Farnham Lane, Langton, Kent. (Feb, 1939.)
- SWEETNAM, Rev. Preb. J. E., F.B.S.A. ; The Rectory, Enborne, Newbury, Berks. (Feb., 1931.)
- SYKES, JOHN ; Whitehouse Cottage, Inveresk, Musselburgh, Midlothian. (Jan., 1912.)
- SYSONBY, LORD ; Great Tangleby Manor, Guildford, Surrey. (June, 1938.)
- TAKA-TSUKASA, PRINCE NOBUSUKE, F.Z.S. ; 1732 Sanchome, Kamimeguro, Megurotu, Japan. (Feb., 1914.)
- TARONGA ZOOLOGICAL PARK TRUST ; Mosman, Sydney, Australia. (Aug., 1913.)
- TEAGUE, P. W. ; Lybrook, Broadway, Worcestershire. (June, 1930.)
- TEBBITT, MICHAEL ; 8 Malpas Drive, Pinner, Middlesex. (July, 1937.)
- TENNANT, Hon. STEPHEN ; Wilsford Manor, Salisbury. (April, 1926.)
- THOMAS, F. E. ; "Edendale," Creswick Road, Springfield Park, Acton, W. 3. (Oct., 1931.)
- THOMASSET, BERNARD C., F.Z.S. ; Seend, near Melksham, Wilts. (July, 1896.)
- TRAVERS, Mrs. J. ; Windmill Cottage, Mayfield, Sussex. (Dec., 1903.)

- TUNESI, A. W. ; Elmside, Vicarage Road, Sunbury-on-Thames, Mdx. (Feb., 1939.)
- TURNER, A. GEOFFREY ; Hungerford Park, Berks. (July, 1934.)
- TURNER, H. B. ; Malverleys, near Newbury. (April, 1928.)
- TURNER, PHILIP W. ; Arley, near Coventry, Warwickshire. (Jan., 1942.)
- TURNER, WALTER ; 28 Queensbury Road, Penshurst, N.S.W., Australia.
- TYEBJEE, ABDE A. S. ; Malabar Court, Ridge Road, Malabar Hill, Bombay. (Sept., 1934.)
- TYSER, Mrs., F.Z.S. ; Gordonbush, Brora, Sutherland, N.B. (Jan., 1934.)
- UNDERWOOD, H. ; The Wheatsheaf Hotel, Burton-Joyce, Notts. (Jan., 1939.)
- UNDY, EDWARD JOSEPH ; 3 Batley Road, Wakefield. (May, 1940.)
- VALENTINE, ERNEST ; 7 Highfield, Workington, Cumberland. (May, 1899.)
- VAN DER OIJE, Baron CHARLES SCHIMMELPENNINGK ; Oosterland Manor, Oosterland, Isle of Duiveland, Zealand, Holland. (Sept., 1939.)
- VANE, E. N. T. ; Ridgeway, Joel Park Estate, Joel Street, Pinner, Middlesex. (March, 1937.)
- VENNING, H. C. ; "Keffolds," Haslemere, Surrey. (Jan., 1927.)
- VIERHELLER, GEO. P. ; St. Louis Zoological Park, St. Louis, Mo., U.S.A. (March, 1928.)
- VOY, Miss HILDA ; Oak Hall, Haslemere, Surrey. (Sept., 1936.)
- VROOM, Mrs. DOUGLAS E. ; 255 So. Beverly Glen, West Los Angeles, Calif., U.S.A. (Rejoined.)
- WALKER, Miss H. K. O. ; Chesham, Bury, Lancs. (Feb., 1895.)
- WALKER, PHILIP ; 19 Rochester Way, Blackheath, S.E. 3. (Aug., 1939.)
- WALLER, H. ; Kittsbury, 64 St. Julians Farm Road, West Norwood, S.E. 27.
- WARRE, Captain GEORGE F. ; 47 Lonsdale Road, Barnes, S.W. 13. (Feb., 1936.)
- WARRE, Mrs. PHILIP ; Coppid Hall, Stifford, Essex. (June, 1935.)
- WAUD, Capt. L. REGINALD, F.Z.S., M.B.O.U. ; Bradley Court, Chieveley, near Newbury. (May, 1913.)
- WEBBER, LEONARD C. ; P.O. GM. RAN, Flinders Naval Depot, Crib Point, Victoria, Australia. (June, 1935.)
- *WEBER, ORLANDO F., Junr. ; 22 East 82nd Street, New York, U.S.A. (Jan., 1937.)
- WENKE, FRANCIS L. ; 1103 Irving Street, Olean, N.Y., U.S.A. (Jan., 1942.)
- WESTON, CLIFFORD ; Hall Leys, Oadby, near Leicester. (Jan., 1938.)
- WHARTON-TIGAR, Mrs. N., F.Z.S. ; 10 Chalcot Crescent, N.W. 1. (July, 1932.)
- WHITEBURN, Mrs. C. M. S. ; Ampot St. Mary's, Andover, Hants. (July, 1934.)
- WHITELEY, F. G. L. ; Heath Lodge, Knutsford, Cheshire. (March, 1939.)
- *WHITLEY, HERBERT, F.Z.S. ; Primley Hill, Paignton, S. Devon. (Sept., 1923.)
- WHITMORE, G. E. ; 168 High Street, West Bromwich, Birmingham. (July, 1935.)
- WILKINS, A. ; Rendcombe, Chesham, Bucks. (April, 1930.)
- WILLFORD, HENRY ; San Souci, Havenstreet, Ryde, Isle of Wight. (Nov., 1907.)
- WILLIAMS, SIDNEY, F.Z.S. ; 19 Beechdale, Winchmore Hill, N. 21. (Oct., 1905.)
- WILSON, ALEC M. ; Middlemoor, Presteigne, Radnorshire. (Oct., 1939.)
- WILSON, AND., F.Z.S. ; 233 Argyle Street, Glasgow, C. 2. (April, 1927.)

- WINTER, DWIGHT ; 800 East Ohio Street N.S., Pittsburgh, Pa., U.S.A. (1922.)
- WITTING, R. C. ; "The Gables," West Horsley, Surrey. (July, 1937.)
- WOOD, Dr. CASEY, F.Z.S. ; McGill University Library, Montreal, Canada. (Sept., 1922.)
- WOOD, J. A. (Quantity Surveyor) ; 68½ Pitt Street, Sydney, N.S.W., Australia. (Oct., 1940.)
- WOOD, Mrs. MURIEL ; 8 Lambolle Road, N.W. 3. (July, 1927.)
- WOOLF, Dr. E. B. ; 6th Floor, Pasteur Chambers, Jeppe Street, Johannesburg, South Africa. (Oct., 1940.)
- WORKMAN, WILLIAM HUGHES, F.Z.S., M.B.O.U. ; Lismore, Windsor Avenue, Belfast. (May, 1903.)
- WORMALD, HUGH ; Newton House, Elm Ham, SO, Norfolk (Rejoined.).
- YAMASHINA, THE MOST HON. THE MARQUIS ; 49 Nampeidai-Machi, Shibuya-Ku, Tokyo, Japan. (July, 1938.)
- YEALLAND, JOHN ; 1 Cemetery Road, Binstead, Isle of Wight. (July, 1934.)
- ZIPP, W. C. H. ; P.O. Box 6899, 430 Commissioner Street, Kensington, Johannesburg, Transvaal, South Africa. (April, 1937.)
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LEWIS, G. ; c/o A. & E. Lewis, Pirie Street, Adelaide, South Australia.

MANSFIELD, H. ; c/o Zoological Gardens, Adelaide, South Australia.

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SHEPHERD, Rev. H. E. G. ; Waikerie, South Australia.

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Auckland, S.E. 1.

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BLAKEY, H. P. ; Dentist, Broadway, Newmarket, Auckland, S.E. 1.

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Rules of the Avicultural Society

As amended, November, 1930.

1.—The name of the Society shall be THE AVICULTURAL SOCIETY, and its object shall be the study of Foreign and British Birds in freedom and in captivity. Poultry, Pigeons, and Canaries shall be outside the scope of the Society. The year of the Society, with that of each volume of the Society's Magazine, which shall be known as the AVICULTURAL MAGAZINE, shall commence with the month of January and end on the 31st December following.

2.—The Avicultural Society shall consist of Ordinary and Honorary Members, and the latter shall be restricted in number to six, and be elected by the Council.

3.—The Officers of the Society shall be elected, annually if necessary, by members of the Council in the manner hereinafter provided, and shall consist of a President, one or more Vice-Presidents, a Secretary, an Editor, a Treasurer, an Auditor, a Scrutineer, and a Council of eighteen members. The Secretary, Editor, and Treasurer shall be *ex officio* Members of the Council.

4.—New Members shall be proposed in writing, and the name and address of every person thus proposed, with the name of the Member proposing him, shall be published in the next issue of the Magazine. Unless the candidate shall, within two weeks after the publication of his name in the Magazine, be objected to by at least two Members, he shall be deemed to be duly elected. If five members shall lodge with the Secretary objections to any candidate he shall not be elected, but the signatures to the signed objections must be verified by the Scrutineer. If two or more Members shall object to any candidate the name of such candidate shall be brought before the Council at their next meeting, and the Council shall have power to elect or to disqualify him from election.

5.—Each Member shall pay an annual subscription of £1, to be due and payable in advance on the 1st of January in each year. New Members shall pay, in addition, an entrance fee of 10s. ; and, on payment of their entrance fee and subscription, they shall be entitled to receive all the numbers of the Society's Magazine for the current year.

6.—Members intending to resign their membership at the end of the current year of the Society are expected to give notice to the Secretary before the 1st of December, so that their names may not be included in the "List of Members", which shall be published annually in the January number of the Magazine.

7.—The Magazine of the Society shall be issued on or about the first day of every month, and forwarded, post free, *to all the Members who shall have paid their subscriptions for the year ; but no Magazine shall be sent or delivered to any Member until the annual subscription shall have reached the hands of the Business Secretary or the Publishers.* Members whose subscriptions shall not have been paid as above by the first day in November in any year shall cease to be Members of the Society, but may be readmitted, at the discretion of the Council, on payment of the annual subscription.

8.—The Secretary, Editor, and Treasurer shall be elected for a term of five years, and, should a vacancy occur, it may be temporarily filled up by the Executive Committee (see Rule 10). At the expiration of the term of five years in every case it shall be competent for the Council to nominate the same officer, or another Member, for a further term of five years, unless a second candidate be proposed by not less than twenty-five Members of at least two years' standing, as set forth below.

In the November number of the Magazine preceding the retirement from office of the Secretary, Editor, or Treasurer, the Council shall publish the names of those members whom they have nominated to fill the vacancies thus created ; and these members shall be deemed duly elected unless another candidate or candidates be proposed by not less than fifteen Members of at least two years' standing. Such proposal, duly seconded and containing the written consent of the nominee to serve, if elected, in the capacity for which he is proposed, must reach the Secretary on or before the 15th of November.

The Council shall also publish yearly in the November number of the Magazine the names of those members nominated by them for the posts of Auditor and Scrutineer respectively.

9.—The Members of the Council shall retire by rotation, two at the end of each year of the Society (unless a vacancy or vacancies shall occur otherwise) and two other Members of the Society shall be recommended by the Council to take the place of those retiring. The names of the two Members recommended shall be printed in the November number of the AVICULTURAL MAGAZINE. Should the Council's selection be objected to by fifteen or more Members, these shall have power to put forward two other candidates, whose names, together with the signatures of no less than fifteen Members proposing them, must reach the Hon. Secretary *by the 15th of November.* The names of the four candidates will then be printed on a voting paper and sent to each Member with the December number of the Magazine, and the result of the voting published in the January issue. Should no alternative candidates be put forward, in the manner and by the date above specified, the two candidates recommended by the Council shall be deemed to have been duly elected. In the event of an equality of votes the President shall have a casting vote.

If any Member of the Council does not attend a meeting for two years in succession the Council shall have power to elect another member in his place.

10.—Immediately after the election of the Council that body shall proceed to elect three from its Members (*ex officio* Members, not being eligible). These three, together with the Secretary, Treasurer, and Editor, shall form a Committee known as the Executive Committee. Members of the Council shall be asked every

year (whether there has been an election of that body or not) if they wish to stand for the Executive, and in any year when the number of candidates exceeds three there shall be an election of the Executive.

The duties of the Executive Committee shall be as follows :—

- (i) To sanction all payments to be made on behalf of the Society.
- (ii) In the event of the resignation of any of the officers during the Society's year, to fill temporarily the vacancy until the end of the year. In the case of the office being one which is held for more than one year (e.g. Secretary, Editor, or Treasurer) the appointment shall be confirmed by the Council at its next meeting.
- (iii) To act for the Council in the decision of any other matter that may arise in connection with the business of the Society.

The decision of any matter by the Executive to be settled by a simple majority (five to form a quorum). In the event of a tie on any question, such question shall be forthwith submitted by letter to the Council for their decision.

The Executive shall not have power

- (i) To add to or alter the Rules ;
- (ii) To expel any Member ;
- (iii) To re-elect the Secretary, Editor, or Treasurer for a second term of office.

It shall not be lawful for the Treasurer to pay any account unless such account be duly initialed by another Member of the Executive.

It shall be lawful for the Secretary or Editor to pledge the Society's credit for a sum not exceeding £50.

Should a Member wish any matter to be brought before the *Council* direct such matter should be sent to the Secretary with a letter stating that it is to be brought before the Council at their next meeting, otherwise communications will in the first place be brought before the Executive.

A decision of a majority of the Council, or a majority of the Executive endorsed by the Council, shall be final and conclusive in all matters.

11.—The Editor shall have an absolute discretion as to what matter shall be published in the Magazine (subject to the control of the Executive Committee). The Secretary and Editor shall respectively refer all matters of doubt and difficulty to the Executive Committee.

12.—The Council (but not a committee of the Council) shall have power to alter and add to the Rules, from time to time, in any manner they may think fit. Five to form a quorum at any meeting of the Council.

13.—The Council shall have power to expel any Member from the Society at any time without assigning any reason.

14.—Neither the office of Scrutineer nor that of Auditor shall be held for two consecutive years by the same person.

15.—The Scrutineer shall not reveal to any person how any Member shall have voted.

The Society's Medal

RULES

The Medal may be awarded at the discretion of the Committee to any Member who shall succeed in breeding, in the United Kingdom, any species of bird which shall not be known to have been previously bred in captivity in Great Britain or Ireland. Any Member wishing to obtain the Medal must send a detailed account for publication in the Magazine within about eight weeks from the date of hatching of the young, and furnish such evidence of the facts as the Executive Committee may require. The Medal will be awarded only in cases where the young shall live to be old enough to feed themselves, and to be wholly independent of their parents. No medal can be given for the breeding of hybrids, or of local races or sub-species of species that have already been bred.

The account of the breeding must be reasonably full so as to afford instruction to our Members, and must appear in the AVICULTURAL MAGAZINE before it is published or notified elsewhere. It should describe the plumage of the young, and *be of value as a permanent record of the nesting and general habits of the species*. These points will have great weight when the question of awarding the Medal is under consideration.

In every case the decision of the Committee shall be final.

The Medal will be forwarded to each Member as soon after it shall have been awarded as possible.

The Medal is struck in bronze (but the Committee reserve the right to issue it in *silver* in very special cases) and measures $2\frac{1}{2}$ inches in diameter. It bears on the obverse a representation of two birds with a nest containing eggs, and the words "The Avicultural Society—founded 1894". On the reverse is the following inscription: "Awarded to [*name of recipient*] for rearing the young of [*name of species*], a species not previously bred in captivity in the United Kingdom."

The Council may grant a special medal to any member who shall succeed in breeding any species of bird that has not previously been bred in captivity in Europe.

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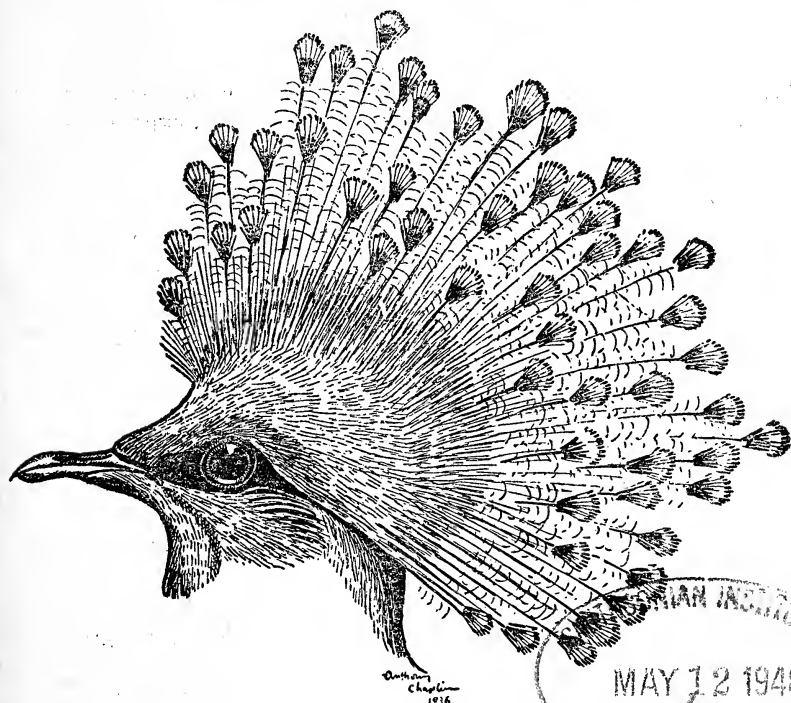
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AVICULTURAL MAGAZINE



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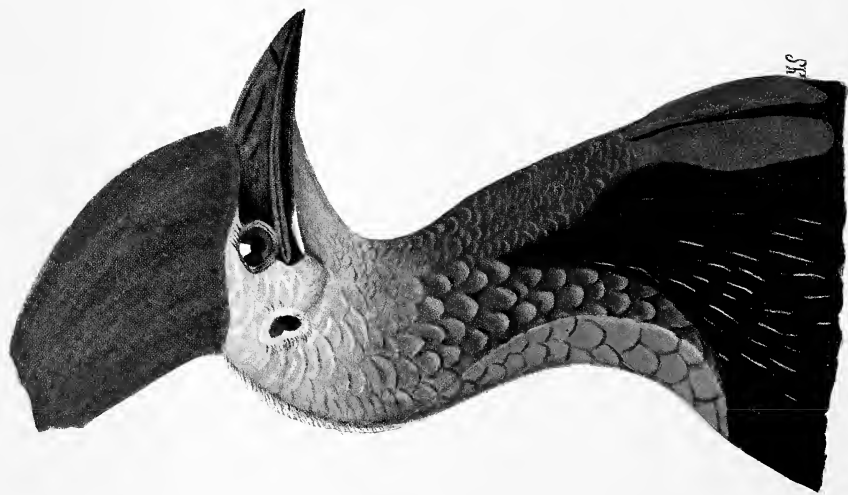
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D'ALBERTI'S CASSOWARY

Casuarus casuarus sclateri



ONE WATTLED CASSOWARY.

Casuarus unappendiculatus ? suffusus.

AVICULTURAL MAGAZINE

THE JOURNAL OF THE
AVICULTURAL SOCIETY

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JAN.—FEB., 1942

CASSOWARIES IN THE ZOOLOGICAL GARDENS, DEHIWELA, CEYLON

By W. C. OSMAN HILL, M.D., CH.B., F.R.A.I., F.Z.S., and
YVONNE BURN

Three Cassowaries are at present on exhibition in the Zoo here, all of which differ from any of the very fine coloured illustrations published in 1901 by the late Lord Rothschild (*T.Z.S.*, pp. 109–148), so that some account of them may be of interest. They belong to two different species, *C. casuarius* and *C. unappendiculatus*, but the subspecific identifications present some difficulties. They are depicted in the accompanying plate.

The *C. casuarius* appears to be fairly easily identified as an example of *C. c. sclateri* (d'Alberty's Cassowary) on account of its huge size and characteristic form of its casque, the coloration of its neck, and the extraordinarily long wattles. It is a large bird and has proved its sex by laying a large number of beautiful emerald green eggs. The eggs have a reticulated surface texture, with the ground colour paler green than the raised reticulations. The eggs average 138 mm. long by 89·14 mm. broad, but vary between a maximum of 153 mm. in length and 92 mm. in breadth and a minimum of 130 mm. long and 85 mm. broad, but the shape varies, so that the egg with maximum length is not necessarily of maximum breadth. The earlier laid eggs are more rounded and better coloured, whilst the last few become progressively paler, of more chalky surface texture, and more elongated in shape.

This bird was originally obtained from New Guinea by the late John Hagenbeck, of Colombo. It is supposed to inhabit the

Fly River district of that island. When it first arrived it was in poor condition and we expected to lose the bird from vitamin A deficiency ; it had no colour but a dirty brown on its neck and was quite blind from xerophthalmia. Forcible feeding with empty banana skins filled with cod-liver oil effected complete recovery, and the bird is now a very fine exhibit with glowing colours on its neck.

The other two Cassowaries are both the same kind, though differing slightly in certain details, which are partly the effect of age and possibly partly individual. They were purchased four years ago from Albert Meems, of Rotterdam, who was passing through Colombo after a collecting trip in New Guinea. They were then both young birds in brown plumage, though the larger one soon showed signs of changing to black. This one is now completely black, the younger one has still a few brown feathers on the hinder part of its flanks, though both specimens have completely developed their cervical coloration. The following is a detailed description :—

Casque of the usual *C. unappendiculatus* type, compressed behind, more so in the younger specimen, greenish horn colour, greener behind than in front, more so in the younger than in the older bird ; beak brownish horn colour with a yellow strip along the mid dorsal line and yellow margins to the gape ; iris light ochre, much paler than in *C. c. sclateri*, which has a dark brown iris. The naked skin above the eye is dark blue, becoming paler to sky blue posteriorly, which colour extends half-way down the back of the neck, except for a semilunar occipital patch which is brownish orange in hue. The throat, including the large bilobed dilatable cheek pouches, is bright purple, almost violet, merging dorsally into the sky blue of the back of the neck, but sharply defined just below the hyoid region from the crimson skin of the lower neck. This crimson patch is continued below into the lateral pear-shaped expansion of coarsely carunculated skin which is flanked by feathers on either side. This last area is mainly cerise in colour, but is bordered anteriorly by bright orange. A bright orange patch completes the picture at the root of the neck dorsally. The wattle is a median continuation of the ventral crimson patch, but is margined with slaty blue.

The above description is matched nearest by that of *C. u.*

rufotinctus in Rothschild's key in his 1901 paper, but the bird differs in the following particulars from that subspecies :—

- (a) The fore part of the neck being crimson in its lower part.
- (b) The wattle being of the same colour, only edged with slate blue.
- (c) The absence of the triangular indigo patch extending down to the base of the wattle.

It agrees with *C. u. rufotinctus* in the colour of the head, face, and occiput and in that of the sides of the lower neck, with its anterior yellow border.

We therefore surmise that we are dealing with examples of the subspecies *suffusus*, the Deep Red-tinted One-wattled Cassowary, described by Rothschild in another contribution (*Bull. Br.O.C.*, xiv, p. 39, 1904), which is unfortunately not available here. It may, on the other hand, be *rothschildi* described by Matschie (*J. für Ornithologie*, 1901, p. 268), which is likewise not to be found in any library in Ceylon.

Aviculturally, as Rothschild discovered, the birds are very difficult to cope with, as they are terrible fighters. Meems told us that individuals of the same species will always fight when kept together, but that it would be safe for us to purchase individuals of different species and they would then agree. If this state of affairs occurs in nature, one wonders how Cassowaries ever manage to perpetuate their kind at all. As a matter of fact we did manage to keep, for a time, one of our *unappendiculatus* with the female *C. c. sclateri*, but as all eggs proved infertile it was suspected that both birds were of the same sex and accordingly instructions were given for the other bird to be tried with the known female. This led to a general brawl wherein one *C. unappendiculatus* kicked the other into a pond and the female *sclateri* was chased out of the paddock altogether. All three have now to be kept separately, at any rate for the time being.

We are indebted to Mr. W. E. Hobday, Government Agent, Western Province, for permission to publish these observations on the Zoo's Cassowaries.

VIOLET-EARED WAXBILLS IN SOUTH AUSTRALIA

(*Granatina granatina*)

By H. S. SEWELL

When in need of a little relaxation, to me a seat in the little rustic arbor inside my garden aviary provides the correct tonic, for from there I have a full view of all the "goings on".

Nothing delights me more than a glimpse of a glorious little bird of rich brown, whose upper tail coverts are royal blue, has face patches of dazzling violet, and is graced with a beak of coral red, but all this poorly describes the beauty of the little Violet-eared Waxbill. The colouring of his spouse in turn is mainly a lovely soft fawn but darker above, and together with her paler violet cheeks makes a striking contrast to her lord and master. When in a courting mood he slightly expands his violet ear patches, which action undoubtably attracts the attention of both hen and human who might be watching.

Although these beautiful Waxbills have been kept by aviculturists for many years, I only know of one authentic published record of them having been bred in captivity. From memory this was achieved by an English breeder some three years back, but unfortunately the young only survived long enough for her to secure the Breeders' Medal. In any case I consider this an achievement of outstanding merit, as I believe that adverse climatic conditions, as compared to ours here in Australia or other temperate zones, would make the breeding task over there even more difficult.¹

I must confess that I have been trying to breed these Waxbills for several years but without success, at first I had great difficulty in acclimatizing them. Just prior to this war a good friend of mine in South Africa was kind enough to let me have one of his best pairs of Violet-ears, and when they settled down one could see at a glance what beauties they really were. Accompanying these were two pairs of Hartlaub's Twin Spotted Waxbills, rarities second to none in my aviaries, but more of these later.

¹ The Violet-eared Waxbill was bred in England by Mrs. K. Drake in 1936, the young birds living to be able to feed themselves, though they died when 8 to 8½ weeks old (AVICULTURAL MAGAZINE, 1936, p. 326).—ED.

The season before last this pair of Violets began nesting, an event which caused me no end of excitement, but also a series of disappointments. The first nest proved to be infertile, but by changing the birds to another aviary the next nest was a little more promising, as two eggs were fertile, but the chicks were dead in the shell. In the third nest a young Violet-ear was actually hatched, but thrown out when two days old as were most of the young in subsequent nests, totalling eight for the season. By this time I found that these birds required an unlimited supply of small live food, as they appeared to consume far more than various other Waxbills; also they would brook no interference whilst nesting, in fact displayed alarm when being viewed from a distance. These observations undoubtedly cost me a few nests, but hatching data had to be noted.

Last season this same pair of Violet-ears started off in fine style, and with the previous experience my optimism as usual ran riot, but ended in failure. Only once did I have them nearly "in the bag", this was when two plump little youngsters were just breaking their quill feathers. A severe rainstorm in the night ended my hopes. The next morning revealed my fears, for their nest was saturated and the little inmates just alive, it looked as though their cold-hearted parents had forgotten their existence, for not the slightest attention did they give them full knowing, I guess, that they were beyond repair. I might mention here that the hen Violet-ear does not cover the young at night after the twelfth night from hatching, and obviously this is a very critical stage in the case of bad weather as foretold.

Another interesting mannerism of the Violet-ears and which is sometimes observed with the other Waxbills when sitting, is what I call "the changing of the guards". Usually the hen picks up a feather and flies near to her nest: this is a definite signal which means "Ain't yer comin' out?"; his lordship obliges, in fact it never fails.

The greatest surprise I had in connection with my favourite Waxbills was one day when in a different aviary from the old birds I saw a strange young fully fledged bird. On inspection I found without a doubt that it was actually a healthy young Violet-eared Waxbill. My surprise will be appreciated, for at the moment I had fully forgotten that I had distributed a setting of these

Waxbill's eggs between some birds, probably *Pytelias*, some six weeks before. The young Violet-ear resembled an adult hen, although lacking the violet ear patches, but the royal blue tail coverts were in evidence. It being a Sunday I anticipated a very interesting day observing, but unfortunately there was very little to be seen, other than the little Violet-ear begging for food from a couple of different Waxbills, but nary a one would take the slightest notice of it. Being an optimist I was hoping that at any minute the rightful foster-parents would take compassion on it, but as time proceeded I gathered, too late, that this little rarity was an outcast. It is now obvious that the mysterious foster-parents realized that the "changes had been rung" on them as soon as the youngster left the nest, and promptly deserted it. Naturally, had I known as much as I do now, early that morning I would certainly have tried my luck at hand-feeding. Reared to this stage it is actually the first Violet-eared young to have left the nest over this way.

A little later in the autumn of this year I separated this magnificent pair of Violet-ears, on account of the approaching cold weather, for I feared that the hen might become egg bound. Up to that time this pair had had nine nests for the season, pretty near a record I should imagine. However, bad luck still dogged me, for soon after this superb cock Violet contracted white diarrhoea, a malady which I have never been able to cure in Finches at this stage, although given heat, tincture of opium, and other reputed cures.

At the time of writing, being on the verge of our 1941-2 breeding season, my hen Violet-ear is again at the top of her form and singing merrily as the hens of this species frequently do. Alas ! I am afraid that she will have to remain a widow for the present as I do not think a mate is procurable for her in Australia, and so ends my sad but eventful experience with my favourite Waxbills.

BREEDING RESULTS FROM FOXWARREN PARK, 1941

By ALFRED EZRA

LEADBEATER'S COCKATOOS.—Four young hatched, three successfully reared.

RINGNECK PARRAKEETS.—Six young reared, five being Lutinos and one Green.

QUEEN ALEXANDRA'S PARRAKEETS.—Four young hatched and reared.

BARRABAND PARRAKEET.—One young hatched and reared by a male Green-winged King and a female Queen Alexandra's Parrakeet.

PENNANT'S PARRAKEETS.—Three young hatched, two reared.

BRONZE-WINGED PIGEONS.—Four young hatched and reared.

NECKLACE DOVES.—Six young hatched and reared.

PAPUAN GOLDEN HEART PIGEONS.—Two young hatched. One reared and the other one is only two days old.

BLACK-WINGED DOVES.—Two young hatched, both died when twelve days old.

WHITE CROWNED PIGEONS.—One young hatched, but deserted when six days old. These Pigeons have nested seven times, but have the bad habit of incubating for a few days and then building a fresh nest and laying again.

CRESTED BRONZE-WING PIGEONS.—At present incubating two eggs, this being the first time they have nested this year.

INDIAN GREEN-WINGED DOVES.—Several eggs laid, but all have been broken owing to the flimsy construction of their nests.

ROTHSCHILD'S GRACKLE.—One young hatched, died when sixteen days old.

JACKSON'S CORAL-BILLED THRUSHES.—Three young hatched, none reared.

BLACK-WINGED PLOVER.—Two young hatched, but both mysteriously disappeared.

TAHA WEAVERS.—Three young hatched. All thrown out of nest when four days old.

PURPLE-HEADED GLOSSY STARLINGS.—One young hatched, died when seven days old.

RED-HEADED PARROT FINCHES.—Two eggs laid, both infertile.

LOO CHOO JAYS.—Five eggs laid and all eaten after two days' incubation.

In the animal enclosure a good many Mandarin and Carolina Ducks were reared. Two White-necked Cranes reared. Four Stanley Cranes were hatched. All the young died. Four Ross's Snow Geese, two Emperor Geese, and five Hutchin's Geese were reared. Also two hybrid Emperor \times Ross's Snow Geese and two White-cheeked \times Greater Snow Geese were reared.

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GROWING BIRD SEED IN GREAT BRITAIN

By D. SETH-SMITH

When the usual supply of bird seed, especially canary and millet, failed, various substitutes were tried with only very moderate success. In the case of Finches and Budgerigars foods other than the usual seeds were generally taken after a time though a good many birds were lost by too sudden a change. With Grassfinches and Waxbills there was more difficulty as they generally refused all substitutes, and, I fear, many died.

In a broadcast talk early last spring I suggested that those who kept seed-eating birds and, at the same time, had some spare ground in their gardens, should try growing seed themselves. I was sure that canary seed would do well if sown early, but was not so certain about the various kinds of millet. However, from letters received this past autumn, it appears that some people have been successful, though millet is more difficult to ripen than canary.

One lady, writing from Brockenhurst on 3rd October, says : "I have grown about three dozen millet sprays which are full of seed and firm, but are still green. Will they ripen out of doors or shall I cut them and hang them up to finish? The seed was sown in boxes in a greenhouse and when quite large plants, transplanted out of doors. I have also grown other seed which has been quite successful and I enclose a sample." The sample consisted of very good and ripe canary seed.

Another letter, dated 8th October, comes from Richmond, Surrey. The writer says : “ I took your advice in early spring to sow millet seed with happy results. I had got disheartened with Budgerigars dying and others not satisfied. I was fortunate enough to buy a 4d. spray last February and planted a few seeds in my allotment. This week I have garnered a sheaf of sprays, some measuring a foot in length. The seed is well matured and my Budgerigars are enjoying it immensely. Very many thanks for your advice.”

One correspondent sent me a spray of seed quite different in appearance from the spray millet, the seeds being much more separated. I do not know the appearance of white millet when growing though the seeds looked like it, but they were not ripe.

Other samples came of a type of millet growing in small upright heads or sprays 2 to 3 inches long. I sent a sample to Kew and received a most kind letter from the Director, my friend the late Sir Arthur Hill, whose tragic death a few weeks later was such a shock to his numerous friends. Here is an extract : “ The specimen you sent me with your letter of 17th October is *Setaria italica*, the Italian Millet. This is a common ingredient in bird seeds and an important cereal in the Tropics and Subtropics. If the seed is sown early in the spring the heads will ripen their seed satisfactorily in our climate. We have plants in the Herbaceous ground which have grown well and ripened their seed this year.”

So it would seem that to grow both canary and millet seed in this country is quite a feasible proposition, though to grow enough for a large collection of birds would require a good deal of space. For one or two birds, however, it would be best to sow millet seed in boxes in a moderately warmed greenhouse or garden frame in February or March and to plant out the seedlings in May, placing the plants 6 inches apart in rows 12 inches apart.

Canary seed can be sown in the open in late March or April, but must be protected from the wild birds, the best protection being strands of black cotton stretched about 2 inches from the ground.

FERTILE BULLFINCH HYBRIDS, AND MORE NEWS ABOUT SPARROWS

By A. H. SCOTT

Last year I mentioned in some notes on my aviaries, the breeding of three hybrids, a cock and two hens, the parents being a Blue-breasted Chinese Bullfinch cock (*P. griseiventris*) and a British hen. Of these young birds the cock, which had a mauve breast, was mated this year to one of his sisters (indistinguishable from a British hen), the other sister being mated to her father. The first pair had in their first nest four eggs, of which three were clear, while the fourth contained a young one which died a day or two before hatching. Their second nest again produced four eggs, of which one was clear, and in the other three the embryos died at about the eleventh day. As it seemed that the brother-sister mating might be a cause of the failure, a wild cock, captured only a month before, was put in his place. The hen showed no objection : indeed she mated with him instantly. Four eggs were laid and all hatched. The young birds were vigorous, but one was drowned on leaving the nest, and the other two came to grief later. The survivor is a cock showing no trace of his quarter of oriental blood except a scarcely perceptible tinge of mauve in the breast.

The father-daughter pair had only one nest. As this hen sat as close as an old fowl, merely getting on my hand when I slipped it beneath her, no proper examination was made, but there were either two or three young. At the end of five days only one remained, very poorly fed, so afterwards I fed it, additionally, myself twice a day until at ten days old it was a fine strong young bird, and I thought it possible to leave the nest alone, as visiting the aviaries was very difficult for me, owing to an injury to my knee which was pierced by the sharp heel of a skate in a heavy fall on the ice last winter. However, a few days later the young bird was dead, evidently from starvation. Meanwhile a second mate, an ordinary British hen, had been introduced, but although this *menage à trois* lived quite peaceably together, the second hen produced only clear eggs. These hybrid Bullfinches may, nevertheless, have a normal fertility, for clear eggs in all my aviaries were the rule rather than the exception this season, and the very cold spring

had probably something to do with it. Chinese (or Japanese) Bullfinches are larger and stronger than the British variety. They are also quite peculiarly tame if I may judge from this one pure-bred bird and his two daughters. They will probably prove to be longer lived in captivity than British Bullfinches, and they show a greater readiness to eat a great variety of fruits and berries, etc. I do not know whether any Chinese hens are obtainable, but if not it should still be possible to build up a blue-breasted strain from the birds which I now have. That is provided things go better next season, for the past one has been altogether calamitous. It may be that the ground was stale for the top soil has not been renewed since the year before the war. The chief reason, I think, was my inability, owing to lameness, to potter round regularly, looking out for dangers, providing extra food, coaxing the crazy ones, and doing the work of the lazy ones. Besides this, no satisfactory successor was found for my bird-man when he was called up.

The worst catastrophe was the loss of my albino Goldfinch, which I had guarded and watched over all winter with the most particular care. She was in shining health and had built a nest at the top of a macrocarpa. As she proved a non-feeder last year, and starved all her fifteen young ones, the very best fosters had been kept back for her special benefit, and allowed to build only when she did. Had I been as constantly around as usual I should have noticed that this macrocarpa, having grown through the wire netting, had, as it blew about in the wind, broken a hole as large as a crown immediately above the nest. As it was, the first warning was the sight of this Goldfinch outside the aviary trying desperately to get back. A few minutes later she disappeared and I did not see her again, till I found her dead body two days later right against the aviary. Doubtless I shall never be able to replace this very lovely bird, nor to make a new variety which would have excited the admiration of even the most conservative and unimaginative of bird lovers.

As a postscript to my recent article on Sparrows the following notes may be of interest. Sparrows at the present time have this advantage, that they require no bird seed : mine do well on brown breadcrumbs moistened with milk or water. They do not seem to touch maggots except in the breeding season. Anyone may find some amusement by releasing Sparrows that have been bred

from albinos or other abnormal birds as they usually remain round the house, and will produce with the wild ones a percentage of novelties. I released some birds a few years ago and others escaped. Since then each year there have been one or more white or cream birds flying around. This spring I found in a wild Sparrow's nest a very odd one, which I took and hand reared. It turned out a bluish fawn, very attractively marked. As all my Sparrows are extremely wild I wished to see whether a hand-reared bird would become and remain really tame. At the same time I reared one with white wings taken from an aviary at a rather later stage of growth. The second bird, like other Sparrows which I have reared by hand, became fairly wild as soon as it could feed itself, and would not perch on my hand even when hungry. The other, reared from the naked stage, has remained very tame, but not at all after the manner of a hand-reared Starling or other bird. Of myself it has no fear at all: on the contrary it much likes to be on my shoulder and to pull my hair. Often when I have made a cup of my hands it has snuggled down and gone fast asleep with its head under its wing, the greatest possible proof of confidence. Yet its whole character remains otherwise that of a wild bird. If I enter the aviary (where it lives along with the other Sparrows) in a different coat nothing will induce it to come near me. Towards any other person it shows no confidence whatever. This, of course, makes it more interesting: no doubt St. Francis found the affection of brother wolf much more gratifying than the indiscriminating love of a dog. But what surprises me is the degree of suspicion shown by these birds towards any new object whatever. The aviary is about 16 ft. long by 10 ft. wide by 10 ft. high. At one end is a small brick shelter with branches over it, the rest of the aviary being bare except for a nesting tray at the opposite end protected by a slanting board. In this covered tray they roosted. From the top of the aviary there happened to hang a few old bits of wire. The Sparrows seemed to like to swing on these bits of wire and for that reason I had put no perches at the further end. A week ago, however, as mice were getting at their food in the shelter, I nailed up a small piece of board quite similar to the tray cover alongside the tray, and placed the food saucer on this, in full view. Next day I found the birds in an exhausted state with the food untouched. Every day since then I have endeavoured by making

them very hungry to induce them to feed at the end where the new branches are placed, but so far have entirely failed. If these harmless branches were snakes they could hardly inspire them with greater fear. I have tried putting their food on the ground and moving their saucer towards the other end, but so far they refuse to go beyond about half-way. If a bird is released it is bewildered temporarily by the total change, but shows no fear of the strange trees and bushes ; yet an alteration in their surroundings, otherwise familiar, seems to have a terrifying effect on these suspicious and intelligent birds.

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AVIARIES IN ASSAM

By C. BUCKINGHAM JONES, LL.A.

Last year I wrote a short account of my birds in Assam. My activities this year (1941), although on a small scale, have been interesting.

I have managed to breed an Eclectus Parrot (*Lorius pectoralis*). Two eggs were laid, I think, although I am not quite certain of this. The parents were in a small outside wire enclosure 20 feet by 10 feet by 8 feet with the usual grandfather type nest and lots of jungle and I made a point of not disturbing them. The eggs must have been laid early in the year, as on the 7th April last a young male Eclectus was first seen and he appeared to be about two months old. On the 18th April the youngster was flying about, and on 20th May I transferred him to a much larger outside aviary where he can fly to his heart's content. In May he was as big as his father with exactly the same markings. This young Eclectus shares an aviary with my Grey Jungle Fowl (*Gallus sonneratii*). My original pair in the last two years bred one cock and two hens. Unfortunately last cold weather a mongoose or something similar killed the parents. I was unable to get either a male or female Grey Jungle Fowl anywhere to mate to the remaining birds.

With my three youngsters, one pair two years old, the remaining bird, a hen, one year old, all the offspring of the pair killed by the mongoose, I expected no results.

However, they were in a fairly big jungle aviary when to my surprise I noticed one of the hens sitting on four eggs. To cut a long story short she hatched and raised one bird, a hen, which is now (September, 1941) nearly full grown. The other eggs were taken by rats, I think. Rats are a pest out here. I like to keep my birds under jungle conditions as far as possible, and if I do this the rats get in. If I attend to the rats then constant interruption seems to spoil all chance of my Jungle Fowl and Pheasants breeding.

However, I now have this young Grey Jungle Fowl practically fully grown and sturdy, notwithstanding the fact its parents were brother and sister.

The other hen, too, laid four eggs and started to sit, but was disturbed by rats and abandoned her eggs.

In so far as Indian Jungle Fowl are concerned the extremely close relationship of brother and sister does not seem to be of much effect. But I shall try and get some fresh blood for next year.

Blue Masked Love Birds.—A pair filled a nest box with rubbish, grass, etc., and I hoped the hen was about to lay but found her dead in the nest. No apparent reason. This has happened twice. I have three birds left and am hoping that sooner or later they will breed.

Ringneck Parrakeets (Psittacula torquata).—One pair hatched two youngsters, one died after four or five weeks, but the other is as big as its parents and flying about strongly.

Mrs. Hume's Pheasants.—I have three pairs of these and an odd cock. So far no eggs. Those who have met these birds in the Naga Hills and Manipur at 4,000–5,000 feet said they would never live on the plains of Assam. But I have two pairs which have already gone right through two monsoons and am still hoping that sooner or later they will lay. I have never heard of Hume's being bred in captivity. *Syrnaticus humiæ humiæ* are not very well known even in this country and are, I imagine, something of a rarity in England.

MEYER'S SICKLE-BILLED BIRD OF PARADISE

(Epimachus meyeri)

By EDRED J. L. MARSHALL

The following notes on this little known species may, I hope, be of some interest. This grotesque rather than beautiful bird inhabits the Owen Stanley range of mountains in South-eastern New Guinea, and is found at an altitude of about 8,000 feet. Examples have been on view at the London Zoo and at Primley Zoo, Paignton, in Mr. Whitley's collection, from whence the specimen I am writing of came into my possession.

I can find very little reference to the species in literature at my disposal, Wallace in the *Malay Archipelago* speaks very briefly of it, stating that the female only was known at his time of writing. Mr. W. Goodfellow also mentions it in his article in the AVICULTURAL MAGAZINE, 4th Series, Vol. 4, No. 8, and speaks of its tameness when fresh captured; also there is a note of the importation in 1909 of three males and two females by Mr. W. Goodfellow for the late Mr. E. J. Brook, to be found in the AVICULTURAL MAGAZINE, New Series, Vol. 7, No. 11. There is also a description given in *Aviculture*, vol. 1.

Here is a description of the male which I have. The sickle-shaped bill is about 3 inches in length and black in colour and is actually much stronger than it would appear to be. The head is completely covered with short velvety feathers, metallic green on the crown and lower side of the face, the throat area being intense metallic purple and the remainder dull black. The feathers of the top of the head are capable of erection in the manner seen in the Yellow-winged Sugar Bird. The gape is a beautiful pale green and the tongue is short and of a dark flesh colour. The eye is pale bluish-grey which tends to make it rather prominent and a little fierce. The back and rump are metallic blue-green and the two long central tail feathers are glossy blue-black with greenish reflections.

The breast is of a soft grey and the feathers are very soft and hair-like in texture, especially those of the flanks which are long and drooping and have a green tinge. The strong crow-like legs and feet are black.

From each side of the breast spring fan-shaped plumes, the individual feathers of which are club shaped, the uppermost ones being dull black but the lower top ones have terminal bands of brilliant metallic blue and the lower and shorter ones are banded with vivid metallic green shading to purple. The wing covert and flight feathers are dull black. The side plumes or fans when in repose are covered entirely by the wings, but when the bird is excited by offer of live insects or spoken to quietly for a while, he will stretch up his body, and lowering the head somewhat as though bowing, will extend these fans making a beautiful show, and sometimes dancing as well.

Just what a full display would be I unfortunately do not know, but I should imagine it would also involve opening the bill widely to show off the green gape as does the King Bird of Paradise. My bird is very active and his great ambition is to have one long meal, rather an unfortunate one in these days of rations, particularly where fruit is concerned.

The long bill makes for difficulty in picking up any food of a very soft nature, such as milk sop, of which he is fond, he is not able to drink properly even, unless the bill is completely immersed, but with fairly crumbly insectivorous food the particles are picked up and thrown back into the throat in a manner similar to that employed by Toucans. Cut slices of apple or pear are tackled by holding with the foot in crow-like way and by using the mandibles as scissors, cutting off suitable portions of the pulp first and tossing them back and then tearing pieces of the skin off and treating them likewise.

I should imagine that in a natural state the long bill would be used to delve into bell-like blossoms in search of insects and to extract beetles, etc., from crevices in bark. The only sounds I have heard are a harsh croak when annoyed and a gentle "Howk" when hungry.

NOTES ON THE BIRDS OF THE CAIRO ZOO

By Major ALAN LONDON, F.R.C.S., A.A.M.C.

The Cairo Zoo is situated at Gizeh in spacious beautifully planted and consequently shady grounds, with water running through them. To start on the large birds. There are some fine Ostriches, including a magnificent pair of the Somali species or subspecies. There are quite a number of the quaint Adjutants (*Leptoptilos dubius*) and Marabou Storks and I was amused to see them picking dead fish out of a vessel of water and losing fully 80 per cent of them to the ever watchful Kites! There were a few Jabirus (*Jabiru mycteria*), and I thought they looked almost identical with the Australian species. The Flamingoes, there were about eighty of them, made a magnificent sight on an artificial swamp; they were all of the common European species, and I wished I could arrange for some to be sent to Adelaide where our stock is sadly depleted. There were seven or eight examples of the funny looking Shoebill (*Baleniceps rex*) which is, I believe, becoming rare, also a large number, nearly fifty, of the European Stork. Other Storks were the White-bellied (*Sphenorynchus abdimii*) and the Woolly-necked (*Dissoura episcopus*), a few examples of each and several of the attractive Senegal Saddle-billed Stork (*Ephippiorhynchus senegalensis*) with red and yellow wattles at the base of the bill. There were quite a number of Cranes, and I remember that Lilford's and the Japanese species were represented. I saw the Rosy Spoonbill (*Ajaia ajaia*) in life for the first time there, two of them in fine colour; there were also examples of Black-billed and Yellow-billed Spoonbills, very like the two Australian species which they may even have been. There were several species of Herons and Ibis including three examples of the lovely Scarlet Ibis (*Eudocimus rubra*) again in fine colour. There were about a dozen Pelicans, I did not see the species, but they were white with a slight pinkish tinge. There were three Cassowaries, each of a different species, the Ceram, Bennett's, and one unnamed, of which I think there is an example in Taronga Park, but I have forgotten its name. There was also a single Cariamia or Seriema. There was a fairly good collection of birds of prey, but I have never been particularly interested in them and only made notes of a few of them. There were quite a number of

different species of Vulture, and I thought the Bateleur Eagle (*Terathopius ecaudatus*) rather an unusual looking species. Perhaps the most attractive of all the birds of prey are the Secretary Birds (*Sagittarius serpentarius*), and there were seven or eight of them in fine condition. There were also several species of Owls exhibited, but I do not think there were any of especial interest. The collection of game birds was most particularly impressive, there were most of the commoner Pheasants and one cock Bel's Silver Pheasant (*Gennaëus beli*) which I do not remember having seen before. There were quite a number of Vulturine Guinea-fowl and a lot of Sennar Tufted Guinea-fowl (*Numida meleagris*), which was also new to me. I noticed a pair of Grey-breasted Red-necked Francolins and two species of Sandgrouse which always seem to me to be a mixture of a Quail and a Dove—the Spotted and the Saharan Coronetted they were labelled. There were also quite a number of small Plovers with a short crest. I could not find their name, but two pairs had young ones. There was a great variety of waterfowl on the various ponds and many of them were full winged, I am not well up in Ducks and consequently did not identify many, there were quite a large number of Shovelers and the males appeared to be just going out of colour. There was also a solitary Black-necked Swan which I always think is a most attractive species. Doubtless most of the Ducks were common species, but there may have been rarities that a practised eye would have spotted.

The Parrot family was not very well represented. There were a few common Macaws and Cockatoos, also one or two Citron-crested and Lesser Sulphur-crested Cockatoos. I noticed one Lesser Vasa Parrot and there was quite a large flock of Quaker Parrots, which breed occasionally I was told. There were several of the commoner species of Lovebirds, and I was interested to see a single cock Abyssinian (*Agapornis taranta*) and about half a dozen Madagascars, all cocks except one. There were quite a number of nice Plum-headed Parrakeets, again all cocks but one. There were several of the common Red-sided Eclectus and two or three Black-headed Conures. There were three Lories labelled Rajah, Yellow-backed, and Blue-checked, but I am fairly certain the last was wrongly identified as it was nearly all scarlet and certainly did not have blue cheeks. The Australian species were very poorly represented as, apart from numerous Sulphur-crested Cockatoos,

Cockatiels, and Budgerigars, there were only single examples of Barraband's, Pennant's, Port Lincoln, and Rosella Parrakeets, and of the Scaly-breasted Lorrikeet. Still, it made me think what a profitable avenue of exchange there would be in more normal times.

Now for the remainder in no particular order. There was a very fine Philippine Hornbill (*Penelopides affinis*), and I was particularly interested in two Abyssinian Ground Hornbills (*Bucorvus abyssinicus*), I noticed one of these had a blue and the other a red neck wattle; whether they were different species or different sexes I do not know. There were several Egyptian Lark-heeled Cuckoos and a single European Roller, a pair of White-cheeked Touracous, a Red-billed Toucan, a single green Barbet which was unidentified, and some Egyptian Bulbuls which are plentiful in the gardens around Cairo. There were lots of smaller birds, mostly the commoner Finches, but I noticed two lovely cock Fischer's Whydahs and a big Weaver—the White-headed Buffalo Weaver. There were also some Finch Larks (*Eremopterix*) which reminded me very much of Alario Finches, and I saw one lovely Peter's Spotted Finch (*Hypargos niveoguttata*) which I always think looks like and must be very closely related to the Australian Finches. Wild in the Zoo I noticed quite a number of the attractive Hoopoes and I thought of Mr. Ward, of Sydney, who accompanied Mr. Lee Crandall, of New York, to New Guinea (*vide Paradise Quest*), it has always been one of his ambitions to have a Hoopoe in captivity! There were also a number of Ring-necked Parrakeets flying around the Zoo, but whether of the African species or liberated Asiatic ones I cannot say, though I suspect the latter.

RICHARD—A YOUNG AMAZON PARROT

By E. MAUD KNOBEL

It is not often given to anyone to have the opportunity of possessing a young Amazon Parrot from the beginning and to know its life history.

This Blue-fronted Amazon was hatched last May in the Keston Aviaries. The parents had had two previous broods. The first was in 1939 when they had four babies—the first ever bred in the British Isles. Mr. Boosey is greatly to be congratulated on such an achievement, for which he has been given a certificate in lieu of the Avicultural Society's Medal, which we hope to be able to present to him after the war. In 1940 the parents again went to nest and reared five sturdy youngsters which I paid a special visit to see. I would have much liked to have had one of these, but they had all been bespoken. This year, though the parents had four eggs, only one bird was hatched and was given to me by our kind President, Mr. Ezra.

Mr. Boosey writes that it was still in the nest on 21st July but it emerged from the nest on 31st July. It was sent to me on 16th August and seemed very much of a baby with the dark big eyes of babyhood. For the first two days he seemed a bit nervous, and kept trying to hide his head in the corner of the cage much like young Budgerigars have a way of doing. He never seemed in the least bit spiteful and does not know the word "bite". In four days I got him to sit on my hand, and by 23rd August, a week after he arrived, he stepped willingly on to my hand for me to take him out. I have never tamed a bird so quickly, but I put it down in a great measure to his never having been frightened or roughly handled as many of the imported birds must be.

On 9th September, as I took him out of the cage, he said his first word, "Pretty," of which he seemed very pleased, repeating it several times.

On 11th September his eyes turned orange; this seemed to happen almost in a day.

Now he chatters freely and is extremely playful and active and loves biting up a piece of wood. He says "Pretty" and "Pretty Boy", "Puss, puss, puss, miau", "Hullo! Oh there you are", he also laughs and sings.

Before he came to me I believe he had been fed a good deal on potato and I did not think he seemed in very good shape when he arrived, being a bit mopey and light in the hand. He now has a varied diet, but sunflower seed is the staple food—otherwise he gets anything that is going, not fish or meat, but vegetables of all sorts, pudding, cake, biscuit, bread and butter, toast, and occasionally a bone to pick. If he sees something on my plate he particularly fancies there is no peace until he gets it.

Mr. Boosey told me he thought he would make a most delightful pet. He certainly has proved right, and has greatly contributed to my happiness and in cheering me in a rather long and tedious convalescence after my serious illness.

* * *

BREEDING RECORDS TO DATE

By DR. E. HOPKINSON, C.M.G., D.S.O.

PARROTS, Part V

(Continued from Vol. VI, p. 188)

South American Parrakeets

SLIGHT-BILLED PARRAKEET (No. 364), *Enicognathus leptorhynchus* (King).

First breeder: Blaauw in Holland in 1913, two young birds being reared. They bred again in 1916. See *A.M.* 1914, 23; 1917, 66.

QUAKER PARRAKEET (No. 368), *Myopsitta monachus* (Bodd).

Recorded by Russ in *Bull.* 1873, p. 94, as having been first bred in the old Berlin Aquarium between 1869 and 1873. Neunzig (p. 654) writes: "they have often been bred . . . a pair flying loose in Saxony . . . brought up many broods . . . in 1879 the flock numbered forty birds." In England also there have been a good many records; Seth-Smith in his *Parrakeets* says that Dr. Greene in his *Parrots in Captivity* recorded the successful rearing of two broods, and among more recent successes have been at the Zoo in 1905 and 1906 and Croker, 1914 (two broods), and three more young reared in 1916. See *B.N.* 1914, 376; 1916, 247.

LINEOLATED PARRAKEET (No. 369), *Bolborhynchus lineola* (Cassin).

Neunzig (*p.* 653) says that they have been once successfully bred—by Zeh at Frankfort, and gives the reference *Gef. Welt.* 1902, 201, 235. For the U.K. only an incomplete success is on record; Baker in 1913 (*B.N.* 1913, 309), one young bird hatched in May but accidentally drowned in August.

BLUE-WINGED PARROTLET (No. 370), *Forpus virens* (Ridgw.) (*passerinus*, authors: NOT Linn).

This, the "Blue-wing Lovebird" of earlier days, was imported in large numbers some thirty or more years ago and was often bred both abroad and in the U.K. Russ was the first breeder, *teste* Russ (*Bull.* 1880, 680), and among British records we have Watson, eight young reared (*A.M.* 1905, 34), Mathias, 1909 (*B.N.* viii, 245), Lovell-Keays, 1914—three reared (*B.N.* 1914, 142); Tavistock, "at Liberty" (*A.M.* 1921, 178), and Heal, 1933, who reared two (perhaps more young), *A.M.* 1934, 110. Hybrids with the female of the next species are also on record.

SPECTACLED PARROTLET, *F. conspicillatus* (Lafr.).

Only a hybrid record. This with the female BLUE-WINGED which were bred in California by Mrs. Tomlinson about 1930 *teste* Plath in *Aviculture* (U.S.A.), 1932, 82, where he says that the cross was first given as "*virens* × *caelestis*", but Dr. Plath finally was certain that the birds then imported as *caelestis* were really *conspicillatus*, and that the cross was obtained as above. See also *A.M.* 1933, 112.

BLUE-RUMPED PARROTLET, *F. cyanopygius* (Bp.).

Bred by Mrs. Goodard in 1927 and the A.S. Medal awarded for a first success in the U.K. (*A.M.* 1928, 52).

PASSERINE PARROTLET (No. 371), *F. passerinus* (L.), *F. p. passerinus*, Guiana (*guianensis*, Sw.), *F. p. viridissimus*, Lafr., Venezuela and Colombia.

Both races are imported and are often known as "Guiana Parrotlets"; a better name for the second is "Green-rumped Parrotlet".

They have been bred several times *teste* Neunzig, *p.* 653. In the U.K. Tavistock bred "*viridissimus*" and he thinks it was also

bred at Brighton (*Parrots*, p. 155). In *A.M.* 1926, 244. Dr. Wildeboer gives an account of success at Hull, which appears to have been with *passerinus*. Whitley in 1931 reared a full brood (which I saw) of this Parrotlet. Plath told me in *lit. Oct.* 28, 1932, that he bred this bird in Chicago in August, 1924, rearing one young bird which he kept two years and then gave away. In his article on the Parrotlets in *Aviculture (U.S.A.)*, 1932, 83, which is accompanied by a coloured plate showing half a dozen species, he unfortunately uses the name *vivida* for this species, but from the context alone, one can see that he meant to write *viridissima*.

Hampe wrote to me from Berlin in February, 1936, that in *Die Gefiederte Welt* of 27th July, 1882, Dr. Frenzel described the successful breeding of "die grünbürzelige Sperlingspapagei" in Germany that year and wrote "they left the nest so quickly that I never saw them till they flew". If this refers to *passerinus*, as I expect it does, it provides by far the earliest success.

ALL-GREEN PARRAKEET (No. 372), *Brotogeris tirica* (Gm.).

Neunzig (p. 659) writes: "have been occasionally bred both in cage and bird-room. A pair with Parson Hintz had four young in two broods in 1882, and two more young in the following year." He was the first breeder *teste* Russ. In the U.K. Lovell-Keays was the first to succeed in 1914, when four young were reared (*B.N.* 1914, 347, and *Jan. inset*). I know of no other British success.

In the December number of the *Avicultural Magazine*, 1939, is a wonderful article by Helmut Hampe of Berlin on the *Brotogeris*; it is followed, I regret to say, by the announcement of his death. It contains full and critical accounts of all the records (and they are not numerous) of the breeding of these Parrakeets. From it the above can be supplemented. For the first success, Parson Hintz's, Hampe gives the reference *Gef. Welt.* 1883, 205, and the date as 1882 with two young in the first nest, four in a second, and then in 1883 two more young followed by a second nest from which nothing came. Other successes with the references given are:—

Gef. Welt. 1886. Two young reared by G. Graeff.

— 1894, 214. Seven reared by Von Prosch in two years.

— 1932, 229. Charlotte Rieck reared two broods in a cage 80 cm. long; the young flew in 5-6 weeks and two of the young

had started to breed on their own. He then gives an extract from *Vog. ferner Lander*. 1931, 173, where N. Grasl reports that two blue *tirica* were reared from a pair of normal green birds at the Schönbrunn Zoo, and two more blues with two greens from a second nest; of the four blues, two were accidentally killed (drowning and a rat), and the other two sold to a Budapest lady, who reared seven blue young ones which came to grief in the Great War. A coloured plate of one of them accompanies the article.¹

TOVI PARRAKEET (No. 373), *B. jugularis* (Müller).

Hampe says Frau Veronica Greiner in Vienna was the first breeder in 1873 and 1874, when three young birds were reared. Hampe says this is the only real record, though Russ gives two successes, Greiner and Schmalz, but the latter's single young bird only lived eight days. In Neunzig the name Grimm is used instead of Greiner, "hence the quoting of both names by Hopkinson," and Butler's "frequently bred in Germany" is incorrect.

ORANGE-FLANKED PARRAKEET, *B. pyrrhopterus* (Lath.).

Hampe (*l.c. above*) says that the first breeding was in Denmark about 1902 reported in *Gef. Welt*. 1902, p. 82, where it is stated that the fledglings were growing well. (Did they live? As Hampe includes this as a success I feel sure we can take it they did.—E.H.)

In England W. Lewis was the first to succeed in 1925, when three were reared out of five hatched: A.S. Medal (*A.M.* 1925, 292; 1926, 71, 116). Has there been other success in the U.K.? In California the species was bred by R. R. Hood in 1933, five young being reared—two by the parents, three by hand. Account by the breeder and announcement of the award of the French Medal appeared in *L'Oiseau*, 1936, 526. See also *Vögel Ferner Länder*, 1926, 71.

¹ Hampe also gives the following notes on various blue *Brotogetis*, which I give here as of interest, though with no breeding-record connection. "Another blue *tirica* figured in *Revista do Museu Paulista*, 1920. A blue Tovi shot out of a flock of normal ones *teste* Finsch. (*Papagei*), and Lord Tavistock in his Parrot book says he was once offered a live white Tui Parrakeet."

REVIEWS

THE HANDBOOK OF BRITISH BIRDS, Vol. V (Terns, Gulls, Skuas, Auks, Rails, Game Birds). By H. F. WITHERBY, F. C. R. JOURDAIN, N. F. TICEHURST, B. W. TUCKER. Price 25s. Published by H. F. and G. Witherby, Ltd., 326 High Holborn, London, W.C. 1.

With Volume V, the final volume of the *Handbook of British Birds*, is completed the results of six and a half years of constant work and Mr. Witherby and his co-editors are to be sincerely congratulated on this invaluable contribution to ornithological literature. In the fact that the last two volumes were published after the outbreak of war the highest praise is due to the publishers.

In the preface to Volume V it is stated that, "We feel entitled to hope, moreover, that our work will prove of value not only in providing a summary of what is known, but also in directing attention to the many gaps in our knowledge, and thereby stimulating further research. Although no single branch of our subject can be considered 'worked out', it is perhaps in many aspects of breeding biology and study of behaviour that the most obvious gaps exist, notwithstanding the vast accumulation of facts in recent years. It may be permissible to refer especially to the subject of display because in this work for the first time (apart from the notable pioneer effort in the *British Bird Book*) a serious attempt has been made to summarize what is known of this very interesting side of avian life. . . . Under the heading of breeding-habits in the more restricted sense, in spite of the great advance since the *Practical Handbook* was written, there is still a great need for precise information on even such matters of comparatively straightforward observation as fledging periods and the share of the sexes in building, incubation and care of young in many species, not to mention such subjects as nest-sanitation, disposal of egg-shells and others, which were omitted from the breeding section on account of the inadequacy of available data." It is this side of ornithology which is of special interest to aviculturists and they have peculiar opportunities for acquiring the information.

Though sea birds have not enjoyed much popularity among aviculturists in the past, apart from the notable successes of Dr. Derscheid in Belgium and one or two other aviculturists, there

are many interested in Pheasants and other game birds and the rails to whom this volume will make special appeal. Volume V also contains additions and corrections to the four preceeding volumes, the systematic list of British birds, and index of English names in Volumes I to V.

To anyone who has a sincere interest in ornithology the complete set of the Handbook will prove an unending source of help and pleasure. His Majesty's Government was certainly wise in refraining from placing a purchase tax on books !

P. B-S.

A CHECK LIST OF BRITISH BIRDS, with a short account of the status of each. Compiled from the *Handbook of British Birds*, by H. F. WITHERBY, M.B.E., F.Z.S., M.B.O.U., H.F.A.O. Price 5s. Published by H. F. and G. Witherby, Ltd., 326 High Holborn, London, W.C. 1.

Reprinted from the *Handbook of British Birds*, this check list is in a compact and practical form and suitable for a number of purposes such as reference, notes, and local lists, labelling, etc., each alternate page being blank. 520 species are dealt with including 219 which breed or have bred in Great Britain during the present century, 82 regular winter-visitors and passage migrants, 238 occasional and irregular visitors, and the extinct Great Auk.

P. B-S.

* * *

NOTES

A TRIBUTE

It is with great regret that the death of Mr. H. W. Schofield, for 42 years Manager of the Art Department of Messrs. John Bale and Staples, is announced. Though Mr. Schofield was known only to few members of the Avicultural Society his work was appreciated by hundreds, for it was entirely owing to his personal efforts that the high standard of the coloured plates published in the Magazine was attained. Mr. Schofield was a master in the art of lithography and no trouble was considered by him too great in order to reproduce a painting as near perfect as possible. He shared the disappointment of the Editor, when, with the outbreak of war and the greatly increased cost of production, lithography had to be abandoned for colour block printing ; but with this again Mr. Schofield attained a very high standard of reproduction. Though 72 years of age and therefore exempt from the duties of fire watching, Mr. Schofield refused to be excused from his share of protecting his firm's buildings at night. On Friday, 21st November, he fell while on duty and fractured his skull ; he died in hospital on Sunday, 30th November. The Editor feels sure she is expressing the feelings of all members

of the Society in paying tribute to a man who was a master of his art and who died in the service of his country. He is a great loss and will be mourned by all with whom he came in contact.

SAMUEL STACEY OF THE BRONX ZOO

Samuel Stacey, Head Keeper of birds at the Bronx Zoo since 1906 and one of the best-known practical bird men in the United States, has retired from active duties at the Zoo. For the first time in its history the New York Zoological Society has created an honorary position on its keeper staff, and Mr. Stacey retires with the title of Honorary Head Keeper of Birds.

He reached the retirement age of 65 in April, 1941, but because of his extraordinary ability to handle birds an extension of service was granted him. Early in July he suffered a heart attack which incapacitated him for active work, but he returned to the Zoo in an advisory capacity, aiding in the training of new keepers. Mr. Stacey was one of the first thoroughly trained, practical bird men in any zoo in the United States, and many of the practices in feeding and handling birds which he instituted at the Bronx Zoo have since been generally adopted. Soon after he came to the Zoo in 1904 he organized a basic routine for taking care of birds, and although it has been modified from time to time, it is still the backbone of bird-keeping in the Bronx Zoo collection, which is the largest and finest in the world.

Mr. Stacey was born in Hampshire, in England, on the estate of the Duke of Wellington, and was the third generation in his family in the service of the Duke. His grandfather had been the "Iron Duke's" body sergeant at the Battle of Waterloo, and after the campaign came back to England to become water bailiff on the Duke's estate, in charge of the fishing rights. Mr. Stacey's father, also born on the estate, became its gamekeeper.

When Mr. Stacey was a boy he was selected by the Duchess of Wellington as her bird boy to care for small cage birds and as he grew older was sent to the London Zoological Garden to serve an apprenticeship as a keeper in the bird department. After several years of training there he came to the United States in 1903, taking care of the bird collection in the Philadelphia Zoo for a year and then entering the Bird Department at the Bronx Zoo in 1904.

The Bronx Zoo at that time was only five years old and its bird house keepers were untrained men with no experience in handling the rare and delicate birds that were beginning to pour into the new zoo from all parts of the world. Mr. Stacey began to pound into the keepers the principles and methods he had been taught under the Duchess of Wellington and in the London Zoo, advised in the selection of men especially fitted to be bird keepers, and through the years built up a staff of keepers whose competence could scarcely be matched anywhere in the world.

Mr. Stacey's own favourites in the bird collection were the Toucans, Parrots, Birds of Paradise, and Humming Birds. Until a few years ago he held a record for longevity of Ricord's Emerald Humming Bird, having kept a specimen on exhibition for three and a half years. The bird finally died because a fuse blew out one night, allowing the temperature of its specially heated cage to fall below its survival point.

Visitors to the bird house at the Bronx Zoo, who had known Mr. Stacey for a long time, often asked him to put his favourite birds through a routine of tricks he had taught them. An Ariel Toucan he had trained to lie on its back in his hand, with its wings held tightly together, and allow itself to be tossed repeatedly into the air.

Another bird which he often demonstrated was "Cocky", a Sulphur-crested Cockatoo, which would hop up and down and raise and lower its crest on command and in time to Mr. Stacey's whistling.

ERRATA

Page 209, Nov.-Dec., 1941, Vol. VI. *Cissolophia* should read *Cissolopha*.

CORRESPONDENCE

BIRD BREEDING IN FRANCE

I have heard recently from M. A. Decoux who, although deprived of proper food himself, still manages to keep his bird collection at G ry, near Limoges, Unoccupied France. He has even had some breeding successes with many species, particularly Scarlet Tanagers and Australian Parrakeets, including Queen Alexandra's, Many-coloured, Swift, and Crimson-wings.

Supplies, however, are getting shorter every day, and he does not know how much longer he will be able to feed his birds. The more delicate insectivorous and frugivorous birds died long ago owing to want of proper food.

He writes that he has now quite a number of Blue Masked Lovebirds, as have also several other amateurs in the south-west. These French Blue Masks are quite a different strain to those existing in England and in California. They actually originated from my own green birds, which I had secured from Chapman's many years ago when they were first imported. After several seasons of successful breeding, we had to cut down their number and about ten years ago Mr. Fooks sent two pairs to a novice amateur, M. Morin, in South-west France. The following year this gentleman wrote to say that, although the birds we had sent him were perfect, he would like to point out that their offspring was not satisfactory: their young, he said, instead of being the normal green and yellow colour were blue and white, which he did not like so well! We promptly replied, explaining his great luck, and during the next years he bred many more blue birds, which found their way to other aviaries and became well established. Needless to say, never one Blue Lovebird was ever hatched at Cl res! I hear also that M. A. Blanchard has now at Toulouse a great many lutino Fischer's Lovebirds.

M. Decoux states that bird trade is very active in the whole of France (naturally only aviary-bred specimens), people finding some consolation and forgetfulness in their hobby, that no hardships can check. Their price has gone up about ten times in francs. From America we can hardly figure out how our European friends can carry on with animals under tremendous difficulties and we admire them for it.

J. DELACOUR.

NEW YORK ZOOLOGICAL PARK,
BRONX,
NEW YORK.

* * *

BULLFINCHES

I think our Editor is greatly to be congratulated on such an excellent number of the AVICULTURAL MAGAZINE for the last of 1941. Personally I enjoyed all the articles, but especially Dr. Amsler's, but I should like to put in a plea for the Bullfinch when he compares the seed-eaters to the softbills. Is not the Bullfinch one of the most lovely of birds of our countryside? There is a pair round this cottage, and when I see them sitting in the sun my heart rejoices at the lovely sight, and one feels how beautiful Nature is in a world so full of dreadful things.

I have kept many Bullfinches, and when one comes to talk about tameness—can you beat them? They are one of the most delightful pets one can possess.

E. MAUD KNOBEL.

LINDETH LODGE,
PEASLAKE,
SURREY.

[The Editor accepts no responsibility for opinions expressed in Correspondence.]

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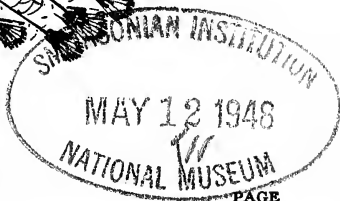
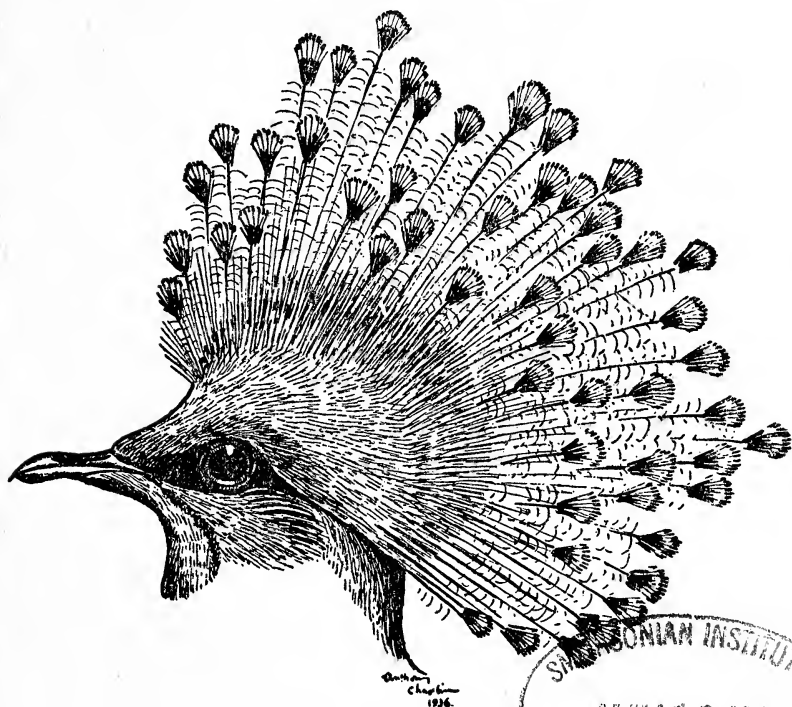
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[Bronx Zoo

SCARLET COCK-OF-THE-ROCK
(*Rupicola peruviana sanguinolenta*)

Collected on the western slopes of the Andes in south-western Colombia and exhibited in the Bronx Zoo for the first time in any Zoo in the world.

AVICULTURAL MAGAZINE

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MAR.—APR., 1942

A COLLECTION OF SCARLET COCKS-OF-THE-ROCK & OTHER RARE COLOMBIAN BIRDS

By PHYLLIS BARCLAY-SMITH

I am indebted to Captain Jean Delacour for information concerning the greatest collection of Colombian birds ever exhibited at one time in a zoological garden and many never before exhibited anywhere.

Virtually no large-scale collecting of birds has ever been carried out in the almost inaccessible western side of the Andes of Colombia, though a somewhat similar collection was made in Western Ecuador by Walter Goodfellow in 1915 (*Avic. Mag.*, 3rd Series, Vol. VI., p. 373). During 1941 Captain Jean Delacour, technical consultant of the Bronx Zoological Park, received a letter from Venezuela from Charles Cordier, the Swiss bird collector who is considered one of the three or four best in the world. Cordier has collected many birds for the collection at Clères, but he was stranded in South America by the war and Captain Delacour had lost touch with him until the arrival of his letter from Venezuela.

Cordier was immediately commissioned to make a collecting trip through the Cock-of-the-Rock country and at the end of September he reached the village of Ricaurte in South-Western Colombia. On his first day in the village he had the extraordinary good luck to find two hand-reared Cocks-of-the-Rock in the possession of a villager, and was able to buy them for a few cents.

Hummingbirds were plentiful all around Ricaurte and Cordier caught many of them within half a mile of the village. They were captured with a sticky gum on the tip of a 30-foot bamboo pole, the gum being tipped on to their wings as they hovered over low-growing flowers.

The Cocks-of-the-Rock were far more difficult to catch. They live at an altitude of 3,200 to 8,000 feet, in an almost impenetrable jungle growth that is perpetually bathed in rain or fog and hung with green moss. There are few mountain trails in the neighbourhood, and to reach the area where the birds were known to be feeding and nesting Cordier had to climb mountain sides almost perpendicularly. After locating the birds the collector observed their most frequent line of flight between trees and then set his nets in their path. The nets were of various sizes, from 50 feet square to 330 feet, and the jungle sometimes had to be partially cleared to make room for them. Bats fluttered into the nets during the night, usually tangling and tearing them, but in the daytime Tanagers, Callistes, and Sugar-birds also blundered into them and were caught.

Cordier returned to Bogota, the capital of Colombia, near the end of November, and started for the sea coast to catch a steamer for New York. Some of his birds refused to eat and for several days he was in danger of losing them. Eventually all were placed on an artificial diet and reached New York in excellent condition.

The Scarlet Cock-of-the-rock is about the size of a Pigeon, with brilliant red plumage and a high, rounded-thin crest that virtually hides its beak. It has black wings and a grey "shawl" over the back. It is very like the commoner species *R. crocea*, except that the orange colour is replaced by red. The females and immature males are bright chocolate-brown.

The photograph of the Scarlet Cock-of-the-rock which accompanies this article can only give opportunity for mental visualization and it is hoped at a later date to publish a painting of this bird in all its wonderful colouring.

The following is the list of birds received from the Cordier Expedition by the Bronx Zoo :—

One Green-headed Wood Nymph (*Thalurania fannyi verticeps*). W. Colombia and Ecuador.

Two Wilson's Incas (*Helianthea wilsoni*). S.W. Colombia and N. Ecuador.

Five Heavenly Sylphs (*Cyanolesbia cælestis cælestis*). W. Colombia and W. Ecuador.

Five Black-billed Emerald Hummingbirds (*Chlorostilbon melanorhynchus*). Ecuador and S.W. Colombia.

Five White-footed Racket-tails (*Ocreatus underwoodi underwoodi*). Colombia.

One Green-headed Emerald Hummingbird (*Agyrtria viridiceps*). W. Ecuador and S.W. Colombia.

Two White-tips (*Urosticte benjamini benjamini*). Ecuador and S.W. Colombia.

One Empress Eugenie's Hummingbird (*Eugenia imperatrix*). Ecuador.

One Club-winged Manakin (*Alcotopterus deliciosus*). W. Ecuador and S.W. Colombia.

Four Colombian Green Sugar-birds (*Chlorophanes spiza subtropicalis*). Colombia.

Two Blue-winged Mountain Tanagers (*Compsocoma flavinucha cyanopters*). W. Colombia and W. Ecuador.

One Green-backed Mountain Tanager (*Compsocoma flavinucha victorini*). E. Colombia.

One Southern Emerald Calliste (*Calospiza florida auriceps*). E. Panama to W. Colombia.

One Colombian Red Tanager (*Piranga flava desidiosa*). W. Colombia.

Two Rufous-throated Callistes (*Calospiza rufigula*). W. Colombia and W. Ecuador.

Fifteen Western Golden Callistes (*Calospiza arthus occidentalis*). W. Colombia.

One Buff-naped Calliste (*Calospiza ruficervix ruficervix*). Colombia and W. Ecuador.

One Rufous-headed Calliste (*Calospiza ruficapilla*). Colombia and N.W. Ecuador.

Two Orange-rumped Tanagers (*Ramphocelus flammigerus*). Colombia.

Seven Yellow-rumped Tanagers (*Ramphocelus icteronotus*). Panama to W. Ecuador.

Two Crimson-backed Silver-beaked Tanagers (*Ramphocelus dimidiatus dimidiatus*). Panama to Venezuela.

Three Ecuadorian Red-headed Callistes (*Calospiza gyrola nupera*). Ecuador and S.W. Colombia.

Four Western Colombian Barbets (*Eubucco bourcieri occidentalis*). W. Colombia.

Twelve Scarlet Cocks-of-the-rock (*Rupicola peruviana sanguinolenta*). W. Colombia and W. Ecuador.

In addition to the above a number of rare Colombian birds, from the Eastern Andes, were purchased from a dealer in New York :—

Two Scarlet-faced Callistes (*Calospiza p. parzudakii*).

Two Yellow-headed Callistes (*Calospiza xanthocephala venusta*).

One Yellow-collared Sugar-bird (*Iridophanes p. pulcherrima*).

One Hooded Mountain Tanager (*Buthraupis montana cucullata*).

Two Blue-throated Callistes (*Calospiza cyanicollis*).

Three Crimson-backed Green Toucanets (*Aulacorhamphus hematopygius*).

One Lesser Wagler's Toucan (*Ramphastos ambiguus abbreviatus*).

One Peruvian Jay (*Xanthoura y. yncas*).

Special aviaries have been constructed for the display of the Colombian collection, which indeed must be an extraordinarily beautiful and interesting sight, and the Bronx Zoo with Captain Delacour are to be warmly congratulated on this unique exhibit.

* * *

NOTES ON THE *NEOPHEMA* PARRAKEETS

By SYDNEY PORTER

The *Neophema* Parrakeets or, as they are known to aviculturists in England, the Grass Parrakeets have always been great favourites of mine. They are quiet unobtrusive little birds, beautiful in shape and chaste in colouring. Only one can be called brilliantly coloured and that is the "Splendid", the others, with the exception of the "Bourkes", are clad in soft greens, blues, and yellows.

During a visit to Australia I hoped to see something of these birds in the wild state ; unfortunately owing to shortness of time at my disposal I was unable to see any of them in a state of nature, but friends have promised to take me out and show me several species when I visit Australia again. Fortunately I did see all the species of this genus in captivity in South Australia, and was able to have a long talk with both Mr. Harvey and Dr. Hamilton. The former is the chief authority on these Parrakeets in captivity

and the latter the leading authority on birds at liberty, and it is from the information I gleaned from these two gentlemen that the following notes are made.

South Australia is the headquarters of the genus, only one species, the Turquoise, is not found in that State.

Dr. Hamilton in his conversation opened up a subject which had long been in my mind, that is the question of erosion and its effect on bird life. To put it as briefly as possible—over vast areas in Australia the land is being grazed by sheep which in time eat up all the natural vegetation, the low bushes and plants are continually eaten down so that they never have a chance to seed and thus renew themselves, and no young trees are allowed to take the place of the old ones. The surface of the earth, now unprotected by the thick vegetation which preserved the moisture from evaporation is exposed to the fierce rays of the sun which dries up all the natural moisture. The remaining trees and inedible vegetation are scorched up and die, and gradually the land is turned from a pleasant sylvan paradise, once the home of countless millions of birds, to a dry burnt-up desert where the wind whips the dried soil into thick dust storms. This is by no means confined to Australia but is going on all over the world to-day, especially in North and South America, China, New Zealand, Africa, etc. What will be the result of all this devastation only a few realize. While commercial interests are at stake very little can be done. What does it matter how much land is laid waste so long as the company which exploits it pays a good dividend? I am wandering from my subject, but I suppose that this all leads up to the question as to why the *Neophema* Parrakeets appear to be more plentiful now than they were some few years ago. Those who have not studied the subject would be inclined to say that the birds were now increasing and becoming more plentiful. Fifteen to thirty years ago some of the species, in fact most of them, were recorded as being nearly extinct, especially the "Turquoise", the "Splendid", and the "Orange-bellied". Now one can go into Adelaide and buy at least four species for comparatively few shillings a pair. One sees literally hundreds of Elegants and Bourkes for sale. This would obviously suggest that the birds are much commoner now or that they were being bred in great numbers in Australia, the latter cannot be the case as the birds were nearly all wild caught. The question

is answered by Dr. Hamilton, who advances the theory for which he has ample proof ; that these birds are now being driven out of their formerly remote habitats by the destruction of the native vegetation and by erosion. The birds' food supply now being cut off they are having to seek pastures new and are thus coming into the more settled districts ; as soon as they are noted in a fresh area the trappers hurry along and are often not satisfied until as many birds as possible are caught.

It would be all right if the birds could find new areas for repopulation and settle down unmolested by the trappers, but my own theory is that, with the gradual redistribution of the birds over the more settled parts of the country, we shall see a slow but sure diminution of the species and they will in the course of a few years be brought to virtual extinction in the wild state. I doubt whether any sanctuary or National Park would save them as they are like many other Australian Parrakeets either nomadic or migratory and wander over vast areas, not haphazardly but with definite areas and routes as Dr. Hamilton explained to me.

THE SPLENDID PARRAKEET (*Neophema splendida*)

The home of this lovely little bird is to the north-west of Oodnaddatta in South Australia and a short description of this region will perhaps help to visualize its remote habitat. This description is taken from *The Great Australian Loneliness*, by E. Hill, one of the most interesting books I have read on Australia. Speaking of the district where the birds live the author says, "A hundred and fifty miles farther lie the ranges, the Musgraves, the Everhards, the Mann, and the Petermann, their gigantic peaks touching 5,500 feet, their water-polished slopes and balanced marbles weighing thousands of tons, a throwback to the glacier age, with their virgin mulga forests and millions of acres of Mitchell grass never yet eaten down, and buck spinifex 20 feet high.

"These ranges have been crossed only by few intrepid explorers and one or two prospectors seemingly mad. . . . A scattering of white men is out there, camped on the hidden soaks and springs, but they rarely see one another. . . . One is an old prospector washing gold in the bed of the mountain creeks living mainly on black's tucker. The others, business partners over an illimitable

distance, separately followed the trail of the tribes in the puppy season to barter for dingo scalps, and museum specimens and rare birds, with as many as 300 agents of the Pitchentara tribe snaring by water holes or tracking the wild dog to his lair. . . . Once a year a camel string comes in with a thousand dog (dingo) scalps, a crate or two of birds, and a few tobacco tins of rough gold.

"Amongst the world's best sellers are the birds of this region, rare and colourful Finches (Painted), the dainty Bourke Parrakeet, the Princess Alexandra, her wings an iridescence of opal tints, and the unique Scarlet-chested Parrot that is practically extinct elsewhere. Two pairs of this rarity sent by rail from Oodnadetta attracted much attention on the way down and reckless offers were made, but they were not for sale. One pair was a gift to the King and the other brought £100 in Adelaide.

"To the camp of the white man in the night time the wild blacks bring their catch—a fluttering captive held in the hands or a dead dog thrown over the shoulder or a stone shot with gold. Lithe bodies and white eyes shine in the firelight. They will haggle for hours for another pitch of flour, a precious spoonful of tea, or another lump of sugar."

The Splendid or Scarlet-chested Parrakeet inhabits in very limited numbers the districts between the Musgrave Ranges to the north-west of Oodnadatta down the mid and western parts of South Australia to within thirty miles of the coast at Penong and its range is probably the most sparsely populated region of Australia. Mr. Harvey said that the depression in Australia was the reason that this bird was brought to light again in 1930 after being missing for so many years. People in the remote regions of the country, badly hit by the financial crash, took to rearing and trapping birds as a source of income.

As far as is known this is the rarest of the *Neophemas*, but its habitat is very imperfectly known so it may be more numerous than we are led to believe.

My eyes were simply dazzled by the galaxy of these beautiful birds in Mr. Harvey's aviaries, I think he has about forty of them, mainly his own breeding. In fact the "Splendid" is not an uncommon aviary bird in Adelaide, quite a few aviculturists had pairs in their aviaries where they bred quite freely. I believe Mr. Harvey said he reared twenty-eight during the summer I was in

Australia. The only difficulty is, when the young ones are removed from their parents before their first moult, they invariably die. Mr. Harvey, after several disasters of this sort, left the young ones in with their parents for a year after the first moult ; after this he lost none. The birds are usually double and even treble brooded, and I was shown two pairs in the aviaries with two nests of young ones on the wing and a third lot in the nest box. The birds do not seem to mind breeding with their other young ones in the aviary.

As well as being perhaps the most beautiful of Parrakeets it is also the most gentle and inoffensive and is very little larger than a Budgerigar, in fact it is not as large as some of the giant Budgerigars I have seen at shows in England.

The few wild birds which find their way down to Adelaide are ones taken by the Aborigines from the nests and sold to the gangers on the railway line who hand rear them . . . but the mortality of these delicate little Parrakeets during this stage must be very great, especially as the birds are usually taken too young.

Very little water is found in the districts where the birds live, and it is said that they extract moisture by chewing the succulent leaves of a certain bush.

No coloured plate or stuffed skin can give a true picture of the living bird, the feathers on the head and chest are wax-like and the colours clear and intense. The whole head is a wax-like pale turquoise blue gradually fading into brilliant cornflower blue on the crown, front of the face, and throat ; the breast is vivid geranium red, below this is yellow, the back and wings are a soft grass-green with very pale blue wing coverts. The hen is very much like a hen "Turquoise". It has none of the drawbacks of many Parrakeets except its costliness, and it is a gentle creature never harming other birds. It has a soft voice and never bites up the vegetation in the aviary. Whether it will ever become a familiar denizen of our aviaries I do not know, its price in Europe is rather prohibitive.

Its chief drawback besides its price is the fact that being a very timid bird it is liable, when frightened, to crack its fragile skull on the top of the aviary. I only saw one pair which were really tame, these were in Dr. Cinner's aviaries. A simple diet suits it best, spray millet, of which it is very fond, plain canary and shelled oats, with a leaf of silver or New Zealand spinach.

ORANGE-BELLIED GRASS PARRAKEET (*Neophema chrysogaster*)

This bird is a very great rarity and the only person possessing it is Dr. Hamilton, of Adelaide, who procured all his birds himself. As he has already written a very comprehensive article for the Magazine about this species I can add but little to his notes except that it is, as far as is known, the rarest of the *Neophemas*. Though at various times Dr. Hamilton has seen flocks of considerable size containing up to as many as fifty individuals, sometimes an odd bird has been discovered in with a flock of Elegants. Dr. Hamilton thinks that in these cases the birds may have lost their sense of direction and joined a passing flock of Elegants. They are birds of very fixed habits keeping more or less to their old feeding grounds, and as these are often now under cultivation this may have something to do with its diminution.

The headquarters of this bird is in the south-east of South Australia and they are found about the town of Robe, even in the town itself, which rather indicates that the town now stands on the old feeding grounds of this bird and that the birds are obeying some old migratory instinct. They get frightened and also shot when they arrive around the town and soon disappear.

At certain times in the year the Orange-bellies disappear from South Australia and Dr. Hamilton has good reason to suppose that they migrate to Tasmania. They arrive in South Australia about the middle of June, mate and breed, the young leaving the nest in late August; after this the birds disappear to reappear the following June. The nesting time, by the way, is mid-winter, which can be very cold in South Australia. Their breeding grounds are 280 to 300 miles south-east of Adelaide. They live in the dense scrub and have the most extraordinary nesting habits of any Parrot I have heard of. There is a very common shrub in Australia called "Tea-tree" which is no relation to the tea plant, the stem being only a few inches in diameter; the birds nest at the angle where a stem is broken off about 3 or 4 feet from the ground, the bird laying its eggs on the top of the dead stump. It is thus an easy prey for any carnivorous mammal or bird of prey, though in the dense scrub its colouring would be good camouflage.

Gould was supposed to have found the birds breeding in Tasmania, but Dr. Hamilton thinks that they do not breed there now.

These birds find most of their food on the ground, which consists of small grass seeds. They are also fond of dandelion seeds, and the young live mainly on tender grass.

I saw about half a dozen males in the aviaries of Dr. Hamilton, they were beautiful birds and of quite a different green to the other Grass Parrakeets, the large bright orange patch on the centre of the abdomen is also very distinctive. Dr. Hamilton had the great misfortune to lose all his hens through partitioning the aviary and putting them in one division and the cocks in the other. One night the hens had a fright and flew instinctively to where the partition was and were all found the next morning with cracked skulls. However he hopes to make another expedition to the region where the bird is found and procure some more hens. In books we are given to understand that the Orange-belly is like the Elegant but with an orange patch on the abdomen, in reality it is quite different and when one has once seen it it can never be confused with the other bird.

THE ROCK GRASS PARRAKEET (*Neophema petrophila*)

This bird has a rather restricted habitat and is found most plentifully around the south-west coast of South Australia and also on the outlying islands. It is a bird of the sea coast and is not found far inland, it feeds on the seeds of various plants found on the shore and cliff faces, where it also breeds.

It is rather like an Elegant, larger and much duller in colouring. Where the breeding range of the Elegant meets that of the "Rock" the two birds interbreed with the result that Elegants found within this range are duller coloured than usual.

I saw a few in the shops in Adelaide and also a few in the various aviaries of aviculturists, but I don't think it is a very popular bird like the "Turquoise" or "Splendid", and it was only in 1937 that it was bred for the first time in South Australia.

A few years ago I had some of these birds in England, but found them delicate and bad livers; they came to me with slight eye trouble and never seemed to get over it.

(To be continued)

BRITISH BIRDS

THE HAWFINCH IN FREEDOM AND CAPTIVITY

(Coccothraustes coccothraustes coccothraustes)

By V. A. V. CARR

Could one describe the Hawfinch as rare? It is one of our most handsome birds and in captivity is surely as interesting as any other species, yet eminent ornithologists who I know have not come in contact with it to any great extent. This is no doubt due to the early and very retiring habits of these birds.

The Hawfinch is certainly one of the easiest birds to recognize, with its huge beak, orange or tawny-brown plumage, blue-black quills, and black throat and lores. The female is a lighter colour everywhere, having grey feathers where the male bird possesses orange and tawny-brown feathers.

In Southern Warwickshire, South-East Gloucestershire, and East Worcestershire this bird has a good range, favouring orchards, tall hawthorn hedgerows, beech-woods, and other wooded sites which offer the favourite foods. This latter point governs the movements and localities of most species of birds and the Hawfinch most of all. Provided one has the above-mentioned conditions I think I am right in saying Mr. and Mrs. Hawfinch are not far away.

They have a very distinctive note, especially at that time of the year when our feathered friends are silent, and a note from any one species of bird immediately strikes the ear. In the spring of the year and during the breeding season it is not so distinctive, for the Spotted Flycatcher and Robin make very similar sounds.

Whilst travelling from point to point they always fly at a greater height than any other Finch, sometimes in ones and twos or as many as ten or eleven. Their flight is undulating and they utter their high-pitched distinctive "Click-click" note at regular intervals, very low. Many times I have stopped in my steps to discern high in the heavens the originator of the low "click" sound which has reached my ears.

Their breeding season is comparatively early, and incubation generally begins at the end of April and beginning of May. Their

choice of breeding site varies considerably, sometimes the nest is found only a few feet above the ground in an apple or pear tree in an orchard or garden ; sometimes in a tall hedgerow or finally in the top of a cedar or Wellingtonia fir or cedar on the flat boughs which grow out at right angles from the trunk, parallel to the ground. One well-known bird photographer once asked me to find him a Hawfinch nest, as he had not yet added that species to his already lengthy list of studies for the bird was rare in the district in which he lived ; this I doubted in my own mind and said so. A few weeks afterwards he found six nests, belonging to six different pairs within a few yards of one another in a hedgerow and he was able to fulfill his ambition.

The nest is large, a layer of twigs is used as a foundation, the cup shape of the nest being fastened on, lined with roots, hair, and other fibrous material.

Four or five eggs are generally laid, the eggs are blue to greyish green with streaks of blackish brown and a few spots of the same colour. The eggs are of course larger than other Finches and are very beautiful.

The youngsters are fed almost entirely on insects and it is almost an impossibility to think of rearing them in captivity in any other way. When fully developed and grown they are very easily catered for and make ideal aviary or cage pets, living to a great age ; feeding from the finger and delighting all and sundry with a delightful song, consisting of two short and two long drawn out whistles on an ascending scale.

When the primaries start showing on the youngsters' wings it is quite possible to sex them with every accuracy and it is not with many species of birds that one can do this until they have commenced to moult into their mature plumage at the end of August. The cock youngsters have blue black feathers whilst the hens have a dirtier appearance altogether. In immaturity they are similarly clothed elsewhere with yellowish throats with specks and barred flanks.

In country districts the Hawfinch is hated by a few who cherish green peas and know that this Finch is capable of stripping a row in a very short while. Fortunately for the Hawfinch the Jackdaw is also fond of this delicacy and generally (rightly so) is blamed, but unfortunately for the very despised Jackdaw, Mr. Hawfinch

knows a thing or two and appreciates the saying "the early bird catches the worm".

In wintertime haws, hornbeams, beech masts, ash keys, maple and yew berries are readily eaten, whilst bullace, cherries, and even plum are sampled earlier in the season.

With such a wide range of foods that abound more than any other and always within reach, not being covered by snow or frozen in ice, this bird is indeed fortunate and is one of the last to suffer from any continued stretch of bad weather which other less fortunate species have to suffer.

In view of all these varieties of foods and their secretive habits should one term the Hawfinch a "rare species"?

In captivity they will live on sunflower, hemp, canary, and linseed whilst mealworms, gentles, and ants' eggs can be given when rearing youngsters. Provided sufficient accommodation is available they will agree with any other species of birds and in no way harm them in the normal way. Indeed their aggressive looking appearance, due no doubt to the distinctive large beak, is entirely "phoney" and I would far sooner trust them 100 per cent more than the Budgerigar.

Attempts have been made, as yet unsuccessful, to hybridize with the Hawfinch.

The most favoured "wishful thinking" cross—shall I say—is the Greenfinch-Hawfinch, and provided one has a very large Greenfinch with a small hen Hawfinch I cannot honestly say it is impossible, looking at it broad-mindedly. If one could only conjure up visions of the results of such a mating, but why not?

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CALIFORNIA AVIARIES

By JEAN DELACOUR

I spent most of the month of September, 1941, in California and in Arizona. What a change in the world since the longer visit I paid to this charming part of the world in 1936-7, when I had spent three months there, mostly in the company of Marquis Hachisuka! . . . I had then gathered, thanks to my friends' help, hundreds of native birds, most of which had never been seen in Europe. I brought them over, via Panama, after a long and uncomfortable journey, with hardly any losses, and many, including Yellow-billed Magpies, Mountain and Western Bluebirds, not only lived well, but bred in our aviaries, particularly those I presented to Mr. Ezra, who still possesses some of them. This time, alas, there could be no question of bringing Californian birds to Europe, but the kindness of my friends had not diminished and made my visit as pleasant as ever.

I first attended the annual meeting of the American Ornithologists' Union at Denver, Colorado, early in the month. In the near-by Rocky Mountains I renewed my acquaintance with such delightful species as the Pigmy Nuthatch, Clarke's Nutcracker, Canada Jays, Western and Mountain Bluebirds, Sapsuckers, etc.

I arrived at San Francisco by air on 6th September, with Mr. J. C. Greenway and Mr. J. Moffitt. We went straight to the latter's camp, some eighty miles to the north, among the giant redwoods, and we spent there four days among some of the most striking of the marvels of nature. On our return to San Francisco I saw, in practical aviaries erected on the roof of the Museum, in Golden Gate Park, the different Galapagos Finches brought over two years ago by Mr. David Lack. Thanks to Messrs. Moffitt and Kinsey they have been very intelligently kept and have bred. Mr. Kinsey will soon send a complete report on the subject for publication in our magazine.

The following days were spent at the home of Mr. A. Isenberg, in a delightful part of the country, Palo Alto, some thirty miles south of San Francisco, between the bay and the ocean. The climate there is very even and only slight frosts are occasionally

experienced, so that most species of exotic birds can be left out of doors all the year round with open shelters only. Mr. Isenburg's installation consists of a large and high aviary, well planted, with four smaller compartments attached. There are also some small cages in various parts of the very pretty garden, a flight, and some cages in the house and, in a different section of the grounds, across a river, another group of aviaries: one large flight and three smaller compartments. Mr. and Mrs. Isenberg take care of their birds with great skill. Their collection is large and varied, mostly composed of exotic insectivorous and fruit-eating species. They had great success, in recent years, with Donaldson's and White-breasted Touracos, the latter unfortunately never completely rearing their young. This last summer, a Tricolor Spreo Starling was raised. All sorts of Tanagers, Bulbuls, Robins, including lovely Loo-Choo, Thrushes, Jays, and Magpies inhabit the aviaries. There is a Central American Toucan and a Chinese Blue Magpie nearly twenty years old. Some Asiatic Bearded Tits and a Japanese Blue Flycatcher live in the house, as well as a hand-reared and very tame California Woodpecker.

On the opposite side of San Francisco, north of the Bay, Mr. and Mrs. Eric Kinsey have excellent and numerous aviaries, which I described four years ago, packed with the most interesting and unusual native birds, to which they restrict their activities. Nearly all species are represented. The American Warblers aviary is remarkable and contains over fifty of these lovely but difficult birds, of over twelve different species. They are in perfect condition. Nearby live some beautiful Woodpeckers and Sapsuckers. Further on, other flights contain all sorts of Tits, Nuthatches, Tyrant Flycatchers, Buntings, Thrushes, Troupials, etc. But space, in these days of restriction, does not allow me to mention their innumerable treasures. Perhaps Mr. Kinsey will describe them himself for us one day. I must mention, however, his Humming-birds, of which he has seven or eight, of four species, each in a very nice compartment of a series of cages installed in one of his rooms.

Mr. and Mrs. Kinsey take care of their birds in the most exact and scientific way, and they carry on important food experiments, which prove of great value to aviculture.

I am sorry to say that Mrs. Bonnestell has now dispersed her collection; temporarily, I hope. She intends living in Tahiti in

the near future. But for her, as for so many of us, plans are difficult to make these days and still more difficult to carry out.

The San Francisco Zoo has only a small bird collection, the most interesting specimen being a fine lutino of the Yellow-naped Amazon Parrot, of the brightest golden yellow colour. As I have reported before, we have, at the Bronz Zoo, a magnificent blue sport of the same species.

Pheasant and Pigeon breeders are still numerous in Northern California and the rare species are kept up in fair numbers. But my old friend, Mr. E. W. Gifford, has given up his Doves, a decision that we all regret. In his and Mrs. Gifford's company we motored east to Fair Oaks, near Sacramento, where I was happy to see again Mr. and Mrs. W. Leland Smith and their rare game birds. They possess now over thirty White Eared Pheasants (*Crossoptilon crossoptilon*), a good number having bred the last three years, for the first time in captivity. It seems that this wonderful species is now well established. There are also some all-black Kalijis (*G. moffitti*), a pair of Imperials, and a pair of Rheinart's Argus, which I presented to Mr. Smith some years ago. The latter have bred well at Fair Oaks, as well as many other species of rare Pheasants.

We visited, on the next day, the fine pheasantry of Mr. Johnson, in the beautiful Napa Valley, and attended a meeting of the California Game Birds Association, on the fine estate of Messrs. Hooke, up in the mountains, where they are now establishing a big Pheasant Farm.

I wish I had had more time to spend in Northern California to visit more bird collections, but my time was limited and I wanted to reserve some time for the South. In the welcome company of Mr. Kinsey, I flew down to Los Angeles, where we were the guests of our old friend, Mr. W. Sheffler. Even early in September the temperature was perfect, nicely warm in the day and cool at night. The climate of Southern California is just perfect for bird keeping.

I never had the time to visit again the numerous collections in the neighbourhood, but I hear that Parrakeet and Finch breeding is going on as strong as ever. Mr. Sheffler has, near his house, a fine aviary of a dozen compartments, radiating all around a central shelter. It is full of very interesting foreign birds as well as

some of the native species. Among the latter there is a nice flock of Mountain Bluebirds, a Red-headed Sapsucker, several California Woodpeckers, different species of Tits and Nuthatches, a Cactus Wren, a beautiful pair of Vermilion Flycatchers (*Pyrocephalus rubinus*), all perfectly acclimatized for several years. Among the exotic birds I recognized an old Mexican Yellow Grosbeak, many Australian Parrakeets, including Barnard's and Hooded, an almost complete collection of Australian Finches, several Tinamous, Quails, etc. In a shelter, large cages contain such treasures as Tahitian Blue Lories and Kuhl's Lories, and seven lovely Elf Owls, the only ever kept in captivity. These tiny Owlets, the size of a Sparrow, live and nest in the giant cactus of Arizona. Mr. Sheffler has hand-reared them, two years ago, and they even laid eggs in their cage. They are perfectly tame and most attractive.

Dr. Ralph Woods still has his fine collection of rare Parrakeets and small birds. I particularly admired his Pileated and Turquoisines. Mr. H. Sedley has a perfect series of small aviaries for Finches, looking very pretty among rare plants. He is very successful with the rarer species and I admired five broods of such a rarity as the Painted Finches. He also keeps and rears Mandarin and Carolina Ducks.

Besides these three excellent private collections, I visited again those of the San Diego Zoo, which are extremely fine, particularly the Parrots. Broad-tails, Lories, and Cockatoos, especially, breed in numbers. Among other rare birds I was interested to see several Beccari's Doves (*Gallicolumba beccarii*). The San Diego Zoo benefits by two great advantages : a perfect climate and the clever management of Mrs. B. Benchley. The mammal collection is wonderful, particularly the Apes ; the two Mountain Gorillas, fifteen years old and weighing nearly 700 lbs., are absolutely remarkable.

Mr. Sheffler does not keep all his birds in Los Angeles ; the greatest part of his collection is housed in Arizona, at Salome. The drive through hundreds of miles of California and Arizona desert is marvellous. These American deserts are, in reality, covered with the most interesting vegetation of Cacti, Yuccas, and Xerophitic trees and shrubs, full of birds, reptiles, and insects. Sunrises and sunsets are very beautiful and the colour of the mountains changes constantly. On account of the altitude (2,000 feet) Salome is hot in the day and cool at night, and very dry. The numerous and

large aviaries are built around the walls of a courtyard, with an additional double row in the middle. There are great numbers of Australian Parrakeets and Cockatoos, Macaws, some Conures and Paleornis, and particularly a very fine series of Lories, which the climate suits especially well. Many species are represented and most of them are breeding. There were, last summer, young White-backed (*fuscata*) and Red Lories and a very curious and pretty hybrid White-backed \times Swainson's. Besides the Parrots, there are many Birds of Prey, Pheasants, Pigeons, and Ducks. Curiously enough, Crowned, Nicobar, and all the Australian Pigeons and Doves have done badly in Arizona and had to be removed.

On the way back to New York I stopped at St. Louis and Chicago, and I took great pleasure in visiting again their fine zoos. They both have very good bird collections, including Quetzals, Birds of Paradise, and many other rarities. The large and beautiful planted patio at St. Louis contains about ten Birds of Paradise, as well as many other interesting species which live happily together, among the thick tropical trees, and a large planted aviary is inhabited by seven Cocks-of-the-Rock—a beautiful sight and a great avicultural achievement.

In spite of everything, visiting aviaries is just as much fun to me to-day as it has always been. But I realize only with difficulty that I may never return home, and in any case I shall not find my own birds again. It seems hardly possible that Clères can never be for me now but a lost paradise.

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NOTES ON THE BEARDED REEDLING

(Panurus biarmicus)

By JOHN YEALLAND

How many birds there are which do not at all resemble their common names !

Newton speaks of the “ unhappily-called Bearded Titmouse ”, and it is surely one of the least appropriately named of all, for the bird is by no means a Titmouse, being very unlike the true *Paridae* and reminding one rather of the Colies ; nor is it at all bearded, the black feathers on either side of the males’ faces being more in the nature of long moustaches. The name Reedling, however, seems to me an altogether happy one for a little bird which could scarcely exist other than among reed-beds.

It was in the autumn of 1938 that we received at Sterrebeek some fifty of these birds, and if I remember rightly they came from Poland.

We put them all into an empty cottage bedroom, fixing up for them large twiggy branches and, in the corners, out of the reach of mice, we fixed branches supporting a good quantity of straw, and in this the birds very soon made their little roosting places.

We kept them thus for some six or seven months and did not lose a single one of them.

In the spring of 1939 twelve pairs were sent to New Zealand and several more pairs to England, and it was, I believe, one of these pairs which bred in Mr. Wormald’s aviaries in 1940.

Bearded Reedlings are, of course, quite easy to keep in captivity, but they seem to have a strong tendency to become over-fat.

It is curious that this should be so in such active birds and it seems reasonable to suppose that they are either frugal feeders by nature or that they are obliged in winter at least to work hard for their food.

I think we see an analogous case in the Rock Grass Parrakeet (*Neophema petrophila*) which, unlike the remainder of the group, will very readily become fat in captivity. These birds live in comparatively sterile rocky country where food must often be hard to find. We fed the Reedlings on a proprietary insectile mixture, which was mixed with mashed boiled potato, finely

crumbled bread, and a little hard-boiled egg, the potato and bread forming by far the greater proportion of the mixture.

Occasionally we gave a little maw seed and it seems likely that some seed is beneficial to these birds, for in winter when the small molluscs and other water life are scarce they do feed largely on the seeds of the reeds in which they live.

Maw seed seems to have been a favourite food for them, but it may be that some species of grass seed would be more suitable.

They were not at any time given mealworms for fear that so stimulating a food should be bad for them. We found them very fond of lettuce leaves which we put in the water.

Even on this diet the birds became rather fat, but while it is not claimed that the ingredients of the food in any way prevented them from becoming over-fat, it is suggested that the mixture was so very uninteresting that they did not eat more of it than they could possibly help.

In connection with this aspect of bird-feeding there may be something to learn: it is very easy to give birds too much of the food they like and I dare say that many Lory foods have failed through being made too sweet, but the main virtue of a plain diet lies in the fact that the birds do not feed unless they are genuinely hungry, though there is, no doubt, some danger of a plain diet being insufficiently nourishing and varied.

The Reedlings were exceedingly fond of bathing and it was very difficult to keep the floor even reasonably dry.

In the spring we put two pairs into a small outdoor aviary which was planted with rushes and clumps of *Arundinaria nitida*, the "Queen of Bamboos", the soft green leaves of which showed off the birds to perfection. There was duckweed in the small stream which ran through the aviary, but I am not sure if the birds ate any of it or whatever forms of their natural food it harboured.

Two of the birds were drowned in the stream: it is curious that these birds of the fens should have been so silly, especially as there were shallow places where they could drink and bathe.

The other pair were still thriving when I last saw them at the end of 1939: during the summer the hen laid at least two eggs but unluckily did not attempt to build, either on her own account or in the small receptacles fixed in the bamboos, and the eggs were broken on the ground.

The Bearded Reedling was bred in 1915 by Dr. L. Lovell Keays (*Avi. Mag.*, 1915, p. 358), and this was thought to be the first time, but it was subsequently revealed that Mr. Richardson Carr had bred the species before, but in such a large aviary containing growing reeds and no doubt such a quantity of natural food that some controversy arose as to whether he had bred them in captivity within the accepted meaning of the term.

* * *

BREEDING RECORDS TO DATE.

By Dr. E. HOPKINSON, C.M.G., D.S.O.

(*Continued from p. 24*)

PARROTS, Part VI

Amazons to King Parrakeet

BLUE-FRONTED AMAZON (No. 374), *Amazona aestiva* (Linn.).

Neunzig (*p. 689*) says : " breeding has sometimes been achieved," but gives no details as to when and where. The first real success, at any rate the first properly reported one, was in the U.K. in 1939, at the Keston Bird Farm, where five young birds from one nest were reared : four perfect, the fifth healthy but stunted from over-laying in the nest ; it was the youngest one which so suffered. The breeder (Mr. Boosey) gave a full account in the *A.M.* 1939, *p. 393*, with a photo showing the mother and her five young, which were full-grown by the time the photo was taken.

Hybrids

BLUE-FRONTED × FESTIVE AMAZON.

Sydney Porter told me, July, 1937, that this cross was bred in Derby in 1936 and again in 1937 ; they were bred in a fowl-run and fully reared ; Mr. Porter had seen them and could vouch for the occurrence.

A cross with the male WHITE-FRONTED AMAZON is also on record.

WHITE-FRONTED AMAZON (No. 376), *A. leucocephala* (Linn.).

A hybrid record only : bred at Karlsruhe in 1885. Four eggs laid, three hatched, and one young bird reared ; reference *Die GEF. Welt. 1885*. See *Butler, ii, 181*, and *Neunzig, 700*.

GREEN-CHEEKED AMAZON, *A. viridigenalis* (Cassin).

WHITE-BROWED AMAZON, *A. albifrons* (Sparrm).

There are only hybrid records for these two ; Whitley bred them in 1934. Four young flew in August, which I saw in November—all still alive, three fine birds, though the fourth was rather a weakling.

BLACK-HEADED CAIQUE, *Pionites melanocephala* (Linn.).

WHITE-HEADED CAIQUE, *P. leucogaster* (Linn.).

A hybrid between these two was bred by Lady Poltimore in 1926 ; four young hatched, two left the nest and one was reared. Like the black-headed father but with green thighs like the mother. See the breeder's account in *A.M. 1936, 294*.

WHITE-CROWNED PARROT, *Pionus senilis* (Spix).

Bred by Lord Tavistock in 1934 ; one young bird was reared with great difficulty by Yealland, who gives a good account of the success in *A.M. 1935, ii* ; see also the *Foreigner, 1935, 33*.

GREY PARROT (No. 377), *Psittacus erithacus* (Linn.).

The earliest record of their breeding is to be found in Latham's *Gen. Hist. of Birds, vol. ii, p. 209 (1822)*, as follows : “. . . we are told that at Marmande in France a male and female produced young ones for five or six years together. The eggs were generally four, of which never more than three were good. The nest was made in a cask which had one end knocked out and was filled with saw-dust. . . . Père Labat also mentions a pair which hatched young ones in Paris.” Rowley in his *Ornithological Miscellany (i, p. 165)* says that according to Buffon a pair in confinement bred and hatched their young for a series of five or six years, but that

BAHAMA AMAZON, *A. bahamensis* (Bryant). *Butler (ii, 181)* says that one was hatched with Bonhote in 1909, but died early.

later observation did not confirm this remarkable circumstance. This Buffon record may refer to the same events as those given by Latham ; if so, note there is nothing beyond "hatched".

More recent records are more satisfactory. For the U.K. the first (and I think only record) is to be found in the *Zoologist*, vol. ii, 84, one young bird reared by Riccall in 1843. This record is quoted in *A.M.* 1907, 55. Neunzig (*p.* 708) says they have been bred several times abroad : Lotze in Germany in 1900 is one case *teste* Butler, ii, 192. Mrs. Reid bred them in Madeira at least twice about 1908 ; in that year two out of the three hatched were reared (*A.M.* 1909, 129).

(In October, 1937, Tavistock had one young bird reared till a month old, but it died at that age before Miss Knobel, who was hoping to hand-rear it, could take charge of it.)

GRAND ECLECTUS (No. 378), *Larius roratus* (Müller).

Neunzig (*p.* 718) says that the first real success was with Frenzel of Freiburg, who after many previous failures succeeded in October, 1881. Since then they were bred abroad by others, but I only know two records for the U.K., Miss Drummond in 1912, the first, and Hartley in 1913. Miss Drummond's birds bred again in 1913. See *B.N.* 1912, 303, 338 ; 1913, 322, 373, F.B.C. Medal awarded. For Hartley's success see *B.N.* 1913, 327. In Miss Drummond's original account the name "Red-sided" was used, but this having been found to be a mistake, it was corrected in the *Addenda* to the Medal List, but not till after the supposed breeding of the "Red-sided" (*pectoralis*) had been published.

Hybrids

GRAND × CERAM ECLECTUS.

Butler (*F.B.* ii, 196), quoting a paper by Dr. Meyer in the *Ibis* (1890, 26), says that this cross was obtained abroad in 1888, and Neunzig writing on this record (*p.* 719) says, "Herr Hieronymous paired a female CERAM ECLECTUS with a male GRAND, which had already hatched and reared young with a mate of its own species. In 1888 they produced five broods of these hybrids ; the young of the first two broods died in the egg, the eggs of the third were unfertile, the two young of the fourth brood died two days after hatching, but from the fifth one young bird (a male)

was reared, the other embryo dying in the shell. In 1889 this pair had three more broods, in two of which there were only unfertile eggs, while the young of the third died in the egg."

CERAM ECLECTUS (No. 379), *L. cardinalis* (Bodd).

A hybrid record only, see above.

RED-SIDED ECLECTUS, *L. pectoralis* (Müller).

First breeder Dr. Osman Hill, in Ceylon, in 1937-8. See a full account by the breeder in *A.M.* 1938, 223. They were three families each of one young bird: in August, 1937, a female; in December, 1937, a male; a female, April, 1938, and the pair nesting again at time of report. Dr. Hill says that the sexes are different from the first plumage, and that the young remain in the nest till almost as big as their parents. They were also bred at the Taronga Zoo, Sydney, in 1938, when four young were reared *teste* Patten, the Curator, *in lit.*, 6th January, 1934. They were originally reported as "Grand Eclectus". I presume officially recorded somewhere, but I have not the reference.

BLUE-CROWNED PARRAKEET, *Tanygnathus lucionensis* (Linn.).

In the *Foreigner*, 1937, p. III, Mrs. Bonestell records the successful breeding (a first) of the Parrakeet in California in 1937; two young were hatched and both reared. The two young went to the Chicago Zoo, and the parents reared young in the two following years, Mrs. Bonestell told me by letter, March, 1940.

In 1936 the same pair had had one young, which had to be hand-reared and which (although weakly) survived for four months. This was mentioned in a letter to the *A.M.* 1936, p. 172.

(To be continued)

* * *

THE GREY STRUTHIDEA

(Struthidea cinerea)

By SYDNEY PORTER

The Grey Struthidea is an odd bird, which on seeing for the first time one simply cannot place, and the longer one's acquaintance with it the more puzzled one becomes.

Ornithologists, when the bird was first described and who only had its dried skin to go by, placed it with the *Corvidæ* or Crow-like birds. Now, knowing more about it, they have placed it in a family on its own. Apparently it has no affinities with any other bird. It is certainly no more related to Crows than to Canaries! Its only affinity to the Crows is its incessant activity and unbounded curiosity. From the Finch-like beak and the ability with which it husks and eats small seeds, one might think it was some kind of a giant Finch. This is accentuated by the fact that it takes quick short runs when on the ground, apparently picking up the while minute seeds very much like a Chaffinch or Linnet.

If you saw the bird rolling over on the ground playing with a stone or piece of orange peel in its claws you would know it had no relationship to the Finches. And then its strange nest, like that of no other bird, its peculiar calls and dances, and its extremely varied diet put it apart from all other birds. And I think we should be content to leave it at that and not try and fit it in between any other avian families.

It is not a bird that would ever be popular even if it were common. It is one of those which the old-time bird dealers would have called a "scientific bird", meaning that it would only be bought by a person interested in it from a scientific point of view. Certainly at first sight it has little to recommend it except its strangeness. It is very drably coloured, being a slatey grey, the feathers of the head and neck having paler tips, the wings are brownish, and the large fan-shaped tail, which is usually spread and held at all angles is black glossed with green. It is about the size of a Jay with a flatter head and a cruel looking eye, at least it has a white iris and that always gives a bird a wicked look.

In this case it is not far from the truth for the *Struthidea* is an inveterate bully, though he is not a vindictive one. (After I had written the foregoing I thought I would make sure and see if the eye really was white and I was amazed to find it a bright reddish-brown.) On looking up Mathew's *Birds of Australia* I found the following: "I can never understand why all authors describing this bird state that it has pearly-white eyes. I have lived amongst these birds for over twenty years and never seen a single bird with white eyes, and I have often gone out purposely with field glasses and searched flock after flock." However, I went out to watch the birds again and found that in moments of excitement such as when it is spoken to or given a tit-bit, the iris turns white. I have noticed other birds have this peculiarity of changing the colour of the iris, particularly Parrots.

The *Struthidea* will never hunt a bird to death like many others will, and if a bird stands up for itself as the Azure-winged Magpies will he will just leave them alone or come to some amicable understanding. Ground birds such as Ducks it treats abominably, partly because they cannot retaliate. They certainly take a page from the Nazi's book of rules ; any new bird placed in their aviary they instantly bluster and bully, buffeting and screaming at it until it is thoroughly cowed and when it has learned to respect them it is left alone, within limits ! If a bird dares to hit back they are most surprised, in fact I have never seen a bird register astonishment as the *Struthidea* does. The way it can express its emotions is amazing.

I have had a pair of these birds for many years now; they were kindly given to me by a fellow member of the Avicultural Society who had received them with a small consignment of Australian birds and who did not quite know what to make of them. From the day they arrived they have never "looked back", in spite of sleeping out during the worst winter experienced for nearly a century when there were nearly 30° F. of frost. The birds had a heated shelter which they could have gone into had they so wanted.

Towards each other they are extremely affectionate and seem to do everything in unison. When resting they sit pressed tight against each other, so that one would think it was one bird with two heads ! They go through all manner of quaint antics and

dances, behaving at times like mechanical toys and emitting very unbird-like sounds, rather like a toy train being wound up.

They are fond of playing, very much like a kitten, lying on their backs, rolling over and over, throwing up small stones or orange peel in their claws and catching them again. For inquisitiveness they certainly beat the Crows.

In regard to food, they are the most omnivorous birds I have ever come across. They will eat and enjoy almost everything—soft food, fowl corn, seeds, green food, all manner of fruit and berries, raw meat, insects, bread, and after they have enjoyed anything they lick their mouths very much like a dog or cat.

For several years they have built their strange nest, but no eggs have ever been laid. They seem to play round the nest most of the year, and if anyone looks at them one of the birds will almost at once settle in the nest and make strange aggrieved noises, as much as to say, "This is mine and do not you dare touch it!" At first the nest used to get dissolved with the first autumn rains, but we now put a sheet of plate glass on the wire netting of the aviary above it.

This nest is an extraordinary affair and visitors to my aviaries take quite a lot of convincing that it has not been made by human hands. A fairly slender branch is chosen and at a fork a small blob of wet mud is deposited and into this is worked fine strands of dried grass. Eventually a foundation is made and upon this the nest gradually takes shape. It is a perfectly spherical structure, exactly the size and shape of a pint basin, and is finished off with a rim, in fact it looks just as though someone had balanced an earthen pudding basin on a slender branch!

Great ingenuity is shown in the construction of the nest, the bird using its beak as a bricklayer his trowel. A layer of wet mud is laid all round and into this is wound long strands of fine dried grass. This is allowed to dry before another layer is put on, the birds all the while smoothing and shaping the structure. Naturally the birds' faces get very dirty, but as soon as a layer is completely finished they have a good wash before starting on the next one. They seem to dislike being looked at when making the nest and one or both go through a strange motion that may be best described as drawing themselves up to their full height and lowering themselves up and down with the feathers puffed out making them look

twice as large as they really are, meanwhile putting on a fierce expression such as only a *Struthidea* can, and most obviously using the worst words in the *Struthidea* language !

The birds look very funny when sitting on the nest, something like a Canary might look sitting in an egg cup, in a larger way, of course !

Sometimes a kind of madness seizes them and they dash about as though in the utmost terror; this stops as suddenly as it starts and the birds drop on to the floor and sit side by side.

The *Struthidea* is seldom imported and more often finds its way to zoos than to private collections. Even in its own country it is little known outside the restricted districts which it inhabits.

The following regarding its wild life is taken from Mathew's *Birds of Australia* : " I found it inhabiting the pine ridges, as they are termed by the colonists, bordering the extensive plains of the Lower and Upper Namoi. . . . It is always seen in small companies of three or four together, on the topmost branches of the trees . . . , was extremely quick and restless, leaping from branch to branch in quick succession, at the same time throwing up and expanding the tail and wings. . . . A common bird throughout this district (Cobbora, N.S.W.), in fact this is part of the true home of the species although they usually keep to one class of country, seldom to be met with away from where native pines are growing. . . . Usually it is seen feeding on the ground in small flocks of from six to two dozen, when disturbed they fly to the lower branches of a tree close by, uttering their harsh grating cries and gradually proceed to the higher branches in a series of leaps, uttering a short peculiar squeaky note the while ; when they reach the higher branches, they often cluster together on the same branch, side by side, in fact they appear to cuddle up together as close as they possibly can. . . . Flocks which have taken up their abode about camps and dwellings become extremely tame and familiar. At the present time a flock of twenty-four live about my house, roosting in some pepper trees in the fowl-yard, but they are becoming rather a nuisance, as they eat most of the chicken's food, showing little fear ; they come almost to one's feet to feed, and as they seem to have discovered the strawberries in the garden which are not nearly ripe, I am beginning to think that this flock will have to be destroyed."

In regard to food we are told that they feed on insects, beetles, minute seeds, grasshoppers, etc.

They are quite the most interesting birds I have ever kept. They are tame without being familiar, very hardy, no trouble to feed in war-time as they eat anything, and their strange demeanour and antics put them apart from any other bird I have ever kept. They are so inseparable that it would be difficult to imagine one existing without the other.

* * *

OBITUARY

HORATIO R. FILLMER

It is with much regret that we have to record the death, which took place on 23rd February, 1942, of a Vice-President and one of the oldest Members of our Society, Horatio Rutter Fillmer, at the age of 79.

Although he had not taken an active part in the affairs of the Society for many years past, Fillmer did probably more for it than any other member during its early years, and had it not been for him, it is doubtful if it would ever have existed at all.

It was in 1894 that Fillmer and a few other aviculturists, now mostly gone from us, got together and started the young Society on its career. The word "Aviculturist" did not exist before that time. In a note explaining the objects of the new society, above the signatures of C. S. Simpson and H. R. Fillmer, we read, "it seems desirable and even necessary to invent or even acclimatize a word which will denote 'a person interested in the keeping and breeding of birds', and *Aviculturist* (being analogous to Horticulturist) will do perhaps as well as another. If anyone will suggest a better, we shall be glad to adopt it—till then we beg to subscribe ourselves Aviculturists."

Fillmer and his friend Dr. C. S. Simpson, both resident in Brighton, acted as Treasurer and Secretary respectively during the first years of the Society and together edited the first two volumes of the Magazine. They were ably assisted by such experienced aviculturists as Reginald Phillipps and Arthur G. Butler, but my recollection is that Fillmer was the real mainspring which kept the young society going.

D. S-S.

NOTES

BIRDS AT GIBRALTAR

The Head Gardener of Gibraltar, in a letter to Mrs. Rait Kerr, dated 30th December, 1942, writes :—

“One of the most interesting items here is that we have been able to breed some of the small foreign birds here in the garden ; I do not mean in an aviary, but free. These are Java Sparrows (two), Fire Finches (four), Zebra Finches, do not know for certain ; and we have several types of Weavers and the number of nests they build for other occupants ! I think they ought to be called “Jerry-building Contractors”.

ROYAL ZOOLOGICAL SOCIETY OF SOUTH AUSTRALIA

The Sixty-third Annual Report of the Royal Zoological Society of South Australia reports among other improvements to the gardens the conversion of old brick shelter sheds into a row of cages for Owls, the sinking of a further well for the better draining of the Penguin Pond, and the purchase of a refrigerator for storing the fish for these birds. Fifty different species of birds, comprising 211 individuals, were bred during the year. A pair of Black-footed Penguins from Africa reared one young one and at the time of the publication of the report another pair had an immature chicken in the nest. The Australian Curlews, which are now somewhat rare, reared two young, and a Razor-billed Curassow's egg was successfully hatched in an incubator. The Society is to be congratulated on its achievements and it is to be hoped that it will be able to carry on without great difficulties in spite of the spread of the war area.

ACKNOWLEDGMENT

The Editor acknowledges with many thanks the gift of the photograph of the Scarlet Cock-of-the-Rock by the Director of the Bronx Zoological Park, New York, and the permission to reproduce it as the frontispiece of this number.

* * *

CORRESPONDENCE

LOWER TEMPERATURES IN BIRD-ROOMS

It is probable that, for obvious reasons, many members will have been obliged this winter to keep their birds in lower temperatures than they would have dared to do in normal times, and it is, I think, possible that this may have led to the discovery of certain species being very much more hardy than was formerly supposed, and what is more important, that they may have done better in the lower temperatures than ever they did in the higher ones.

There are, of course, the birds that are known to be delicate, but there are many about which nothing in this respect is known with certainty and whose owners have naturally been unwilling to risk at lower temperatures. It will be recalled that it was mainly the bravery of Messrs. Boosey and Brooksbank that revealed that four species of Grass Parrakeets hitherto regarded as only half-hardy were really quite hardy, at least in southern England, and were far less subject to illness without artificial heat than with it.

I remember that when Derbyan Parrakeets were rare they were treated as half-hardy, but I have since seen a pair of them looking quite cheerful in 34° F. of frost. When I used to keep a few of the African Sun-birds I found them much

less delicate than they were supposed to be—provided, of course, that they were well acclimatized and in good plumage, and I feel sure that there are certain birds which become very “soft” through being kept too warm, in which state they are naturally much predisposed to chills.

It seems unlikely that the birds which will roost in boxes would need much heat at night ; for instance some, at least, of the *Trichoglossi* do not need heat if they have a good roosting box with sawdust in it, though in their particular case there is some risk that they will use the box for nesting in mid-winter and some danger if their liquid food should freeze solid during daylight.

Even during the best of the summer it is surprising how chilly the atmosphere can be in the very early hours of the morning and I expect there are many summer nights during which the temperature falls to 50° F.—yet there are surely few birds which, when acclimatized, are considered too delicate to spend the summer out of doors, while on the other hand 60°–65° F. and even more used to be a common winter temperature in bird-rooms.

It is not, of course, suggested that birds should be kept in temperatures which are uncomfortably low, but I do suggest that if members have been obliged to keep supposedly delicate birds in fairly low temperatures this winter and have found that they thrive in them, they will not fail to turn necessity to good account by recording the facts in the Magazine.

JOHN YEALLAND.

BINSTEAD,
ISLE OF WIGHT.

DIET OF AMAZON PARROTS

I read with interest Miss Knobel's article in the January–February issue of the MAGAZINE, especially about the varied diet which she gave to her Parrot.

Very probably Miss Knobel knows very much more about Amazon Parrots than I do as I know they have been her speciality, but I have found that a varied diet has been disastrous to these birds. An account of my experiences with “Amazons” may be of some little interest and may prevent some future amateurs from making the same mistakes.

Some years ago during various trips to the West Indian Islands, Central and South America, I managed to get together a collection of many rare specimens including nearly all the “Island” species, amongst which were the nearly extinct Imperial, Bouquet's, Black-billed, and Caymen Island.

I had always been sorry for Amazon Parrots cooped up in inadequate cages and fed upon dusty packet Parrot seed. I thought I would show how “Amazons” should be kept. Most of my birds were in aviaries, some of the very tame ones loose in the garden, and they were fed as far as possible on what I imagined was their natural diet ; all manner of fruit and berries in season, such as hawthorn, elder, hips, etc. ; plenty of green food, fresh corn on the cob (of which they are excessively fond in a wild state), and various nuts, etc. ; of course, they always had access to hard seed. Somehow this luxurious diet did not suit the birds, first one and then the other died off. The post-mortems were always the same, enlarged livers. Gradually I lost them nearly all and after that I somehow lost interest in the remainder and these were relegated to ordinary Parrot cages and, though not actually neglected, they received little beyond just plain seed. After that I lost none. I still have these few remaining birds except the hen of a pair of Red-throated which had eggs in an outdoor aviary ; the hen was sitting and one night in May there was a sharp frost which caused the hen to contract pneumonia and die. I never had a pair of birds so savage as these when they had eggs.

After my experience and seeing “Amazons” in kitchens and “pubs” often where you could cut the atmosphere with a knife kind of thing ! and where the birds had been for ten or twenty years, I came to the conclusion that cage life and a very frugal diet of plain seed is the best for Amazon Parrots.

Referring to one or two other interesting articles in the same issue of the Magazine, I notice mention was made of the beautiful Grey-breasted Bullfinch from Japan. I have had a good many of these birds at one time or another. Although they came from a country with a climate perhaps colder than ours in the winter, I found them the most delicate of all the seed-eaters I have ever kept. They invariably died in a few months' time from pneumonic trouble. I wonder if other readers have had the same experience?

Mention is made by M. Delacour of lutino Fischer's Lovebirds; I think I nearly (!) possessed the only lutino "Peach-face" on record. It was given to me by Sir Frederick Freake who suggested that I fetched it from his residence about sixty miles away. As I was very busy at the time I asked if it could be sent by rail. The travelling cage duly arrived but contained only a lovely corpse. It had evidently been handled with the railway companies' usual "care" and possibly thrown from out of the luggage van on to the platform. It was certainly one of the loveliest birds I have ever seen, a clear bright golden yellow, with white rump and the normal pink face. "The railway company offered me 4s. 6d. in compensation!

SYDNEY PORTER.

THE WHITE GATES,
STENSON ROAD,
DERBY.

[The Editor accepts no responsibility for opinions expressed in Correspondence.]

V

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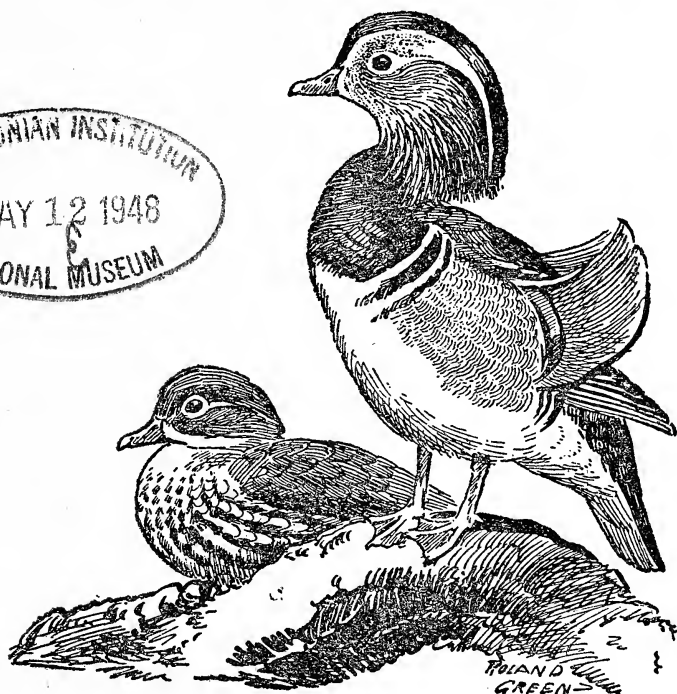
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AVICULTURAL MAGAZINE



WATERFOWL NUMBER

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WIGEON.
Anas penelope L.

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THE JOURNAL OF THE
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MAY-JUNE, 1942

THE WIGEON

Anas penelope L.

By DAVID SETH-SMITH

The Wigeon is one of the most important of our sporting Ducks forming a useful item in our food supply as large numbers are killed for food every year. Its range is a very wide one including the whole of Europe, the greater part of Asia, North Africa, and North-Eastern America. It breeds principally in its northern habitat, visiting the more southern localities as a winter migrant. So far as Great Britain is concerned its breeding range is more or less confined to Scotland, the most Northern English Counties, and Northern Ireland, though cases have been recorded of its breeding even in the south of England. In the north its breeding range has extended considerably in recent years and the species has become more or less a resident, though in other parts of Great Britain it is a winter visitor arriving, often in very large numbers, from September until the end of the year, the size of the flocks being an indication of the severity of the weather in the north of Europe. It keeps to the coast wherever sea-grass (*Zostera*) grows, for that is a food that it loves, though failing that, it will feed contentedly upon young and tender meadow grass as well as many kinds of water plants. Waterfowl enthusiasts should remember that Wigeon are like Geese in their fondness for young grass and it is hopeless to try to keep them satisfactorily without a good supply.

The Wigeon has become nocturnal in its feeding habits as a result of the constant persecution that it has had to endure for so many generations and if the weather is fairly calm during those winter days when it is with us, large flocks spend the daylight hours resting upon the sea, coming in when darkness falls to feed upon

the *Zostera* on the mudflats. In stormy weather they seek the shelter of estuaries or inland waters such as Holkham Lake in Norfolk where strict protection is afforded them, a privilege of which thousands avail themselves, as we are told by Mr. Riviere.

In March the flocks of Wigeon that have spent the winter with us commence their return passage to their northern breeding haunts on the moorlands of Scandinavia, Iceland, or Russia.

The few recorded cases of the Wigeon breeding in the south may be accounted for by birds that have wandered from private collections as it is deservedly popular with waterfowl keepers. A full-winged Wigeon duck bred for several years in succession in the Zoological Gardens, her mate being a pinioned bird. The story of that bird is perhaps worth telling.

Mr. John Young, for many years head gardener at the Zoo, was a dour Scotsman and a master of his profession. No one was ever prouder of his flower-beds and lawns and woe betide any person or animal who should injure a plant or bloom. "Visitors," he would say, "may come to the Zoo to see the animals, but it is a sure fact that many come to see the flowers, and how would the animals look if there were no flowers to set them off." And who shall say that he was not right? He certainly did give us a wonderful show and I know for a fact that many gardeners came, sometimes from considerable distances, to see how Johnnie Young did it. A high official was very anxious to have Peacocks loose in the gardens, but Young knew that these were bad gardeners and opposed the idea so vigorously that it was dropped.

One day he saw, to his annoyance, a Duck walking on the lawn beside a bed of choice flowers and promptly called to some of his men to drive it into the enclosure of the Three-island Pond; but she—it was a Wigeon Duck—needed no driving. Opening her wings she cleared the fence and alighted on the pond where she was greeted by her mate with every show of affection. "Can't you catch her and cut her wing," said Mr. Young to me when I next met him, so I pointed out to him how very delightful it was to have a wild bird of this kind with full powers of flight, so happy and contented that she would not think of flying away although quite capable of doing so. "But will she damage the flowers?" he asked. "No, not in the least," I said, "though she may help you to keep the grass cut. What she may do is to make her nest some-

where amongst your flowers, and if she does so she will be very careful not to disturb anything ; and I know you will see that she is not frightened or disturbed in any way, for to have a Wigeon nesting anywhere in the South of England is very unusual though it would be an ordinary enough occurrence in Scotland.” “So they nest in Bonnie Scotland do they, well if she nests here we will not disturb her.” So the Wigeon was allowed to wander on the lawns and eat the grass, and one day, when she was seen poking about in a bed of wallflowers she was not interfered with.

A fortnight or so later Mr. Young met me with a twinkle in his eye. “She is there all right, right in the middle of the wallflowers, but so difficult to see that if I had not been looking for her and happened to catch sight of her eye I should never have spotted her,” he said. “Now will she be off by the time I want to take up those wallflower plants and do my summer bedding ?” I told him that she would be about twenty-eight days from the day she commenced to sit and, like the good fellow he was, he agreed to defer the summer bedding as long as should be necessary.

One day, when I thought it was nearly time for her to be off, I chanced to go round that way and found, to my horror, gardeners digging the bed. Mr. Young was not far off, and as I approached him to ask what this meant, he met me with a smile on his face. “Ah,” he said, “you should have been here early and you would have seen your Duck with eight of the bonniest fluffy bairns you ever saw, walking round the fence and trying to lead her family to water. I went and opened the gate for her and in she walked as proud as Punch.” And sure enough there she was on the water with all her family around her.

There are only three species of Wigeon, all with a marked family likeness and very distinct from the other Ducks of the genus *Anas* into which they have been placed by present-day systematists ; they are the Common Wigeon, *Anas* (*Mareca*) *penelope*, the American Wigeon, *A. (M.) americana*, and the South American or Chiloe Wigeon, *A. (M.) sibilatrix*.

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REARING OF YOUNG ARCTIC DUCK

By RONALD STEVENS

In the last waterfowl number of this magazine Mr. John Yealland wrote a most interesting and helpful article on rearing Icelandic ducklings. This has prompted me to write down my experiences and the do's and don'ts that I have drawn from them.

There is a great fascination in rearing the young of Arctic Duck, and it is noticeable that all those people who are really keen on keeping waterfowl sooner or later make the attempt. It is difficult, simply because there is so much to discover and learn, and it is certainly troublesome, but that does not matter when one is enthusiastic and has all the necessary time. Perfectly normal, healthy specimens of Longtail, Scoter, Barrow's Goldeneye, and Harlequin have been reared and kept successfully which all goes to show that it *can* be done.

The species in question, which only represent the easily procurable of the Arctic Duck through the medium of eggs from Iceland, are among the most strikingly beautiful of those we know. They are utterly fascinating, they become an obsession—to such an extent that I know of an instance where a pond has been built round these Ducks; so to speak. It was made of concrete and rock, and dwarf trees and scrubby bushes that are characteristic of Iceland gave the correct impression of the severity and aridity of that country.

Trouble begins from the moment you have decided to try rearing Icelanders, for it simply will not do merely to ask a fisherman friend to bring a few eggs back with him. He must be told to take eggs only from incomplete clutches, otherwise how is he to know that germination has not started? A special egg-travelling box must be given him before he goes. He must be told that this box with its precious load must not be subjected to a single heavy jolt during the whole of its journey and that it must be carefully turned over once a day. Furthermore when he returns to Hull or Leith you must be there to meet him to receive the eggs and to watch over them during their railway journey to your home. Beware of hasty porters!

When you have got the eggs safely to your home let them rest while you prepare sitting coops for the bantams which alone are

suitable to perform fostermother duties. After the eggs have been down ten days test them and throw out the bad ones as they not only reduce the temperature of the whole nest but are almost certain to burst later on and spoil the good ones.

Longtail hatch in twenty-three days, Scoter take twenty-five, Barrow's Goldeneye the same, and Harlequin about twenty-eight under bantams. When the ducklings are twenty-four hours old put them out in little pens, each having its own little pond, of a few feet square, with clean water running constantly through it. Do not put more than four Longtail and Harlequin ducklings to a bantam, six Scoter and Goldeneye, otherwise the fostermothers would remain permanently wet underneath and the ducklings being unable to get dry would die of pneumonia. Longtails and Harlequins are much the smallest—then why only four to a bantam? Because they need every scrap of care you can give them and must be given the best possible chance from the beginning, being the most difficult to rear.

The bantam is a necessary evil. When allowed liberty in the pen she is an absolute nuisance, a constant menace to the ducklings, and she pollutes the ground. She must be tethered at one end of the pen which should be coopless and having a short sloping roof to give protection from rain and shade, the latter being particularly necessary to these ducklings. She must be tethered in the middle of the end of the pen so that she cannot reach a corner. It will be found that the ducklings often crowd into a corner on the approach of anyone, and the bantam, if given a chance, would join them there and stand all over them, using them as if they were a doormat. In the bantam's own *Lebensraum* corn and water will be available to her, and do not forget to put the water in a tall receptacle so that it is inaccessible to the ducklings which would otherwise soon make of it a sink of putridity. For them water must be of the purest always.

Longtail, Scoter, and Goldeneye soon settle down happily in their nurseries. Not so the Harlequins. They are miserable, peevish, restless little wretches, always wanting something that you cannot give. In the last summer before the war, realizing that they had to be treated psychologically as well as biologically I put them in the first of a line of pens, the little cement pond of which was fed directly by the tap. I pushed a pebble into this tap which forced

the water' out at all angles in fierce little jets which foamed the little pond up and made the water dance magnificently. Well they bobbed like corks on it and appeared to enjoy themselves comparatively. It was at least a feeble effort to imitate the turbulent waters of their native streams.

With regard to feeding—"Don't," as Mr. Punch would say. At least not for the first forty-eight hours, however hungry they may appear. Icelandic ducklings, for some reason or other, absorb their egg-yolks very slowly and if you feed them too early they are sure to die of congestion. On the day following their first forty-eight hours you may give them just a pinch at a time, certainly do not leave food with them.

When they are seventy-two hours old you may feed biscuit meal, just the same as you do to other ducklings, to the Longtail, Scoter, and Goldeneye, but do not give it to the Harlequins because they will not eat it anyway. It will not do the others much good, but it will do no harm and will, at any rate, accustom them to plain fare for their adult life. For the same reason you may keep it before Harlies when they are feathered, they will not eat it before.

What, then, is the ideal food for these ducklings? I should say mosquito larvæ if you can farm them in sufficient quantities. Personally I have no idea how to go about this but have enormous respect for a friend who does. So, like others, I give maggots. It is a repulsive business but you get used to it. I am so inured to it now that I keep a huge maggatorium going, right on top of a hill for sentimental reasons. When it is in full flower it yields a bucketful or more of maggots daily. I feed it with whole carcasses of sheep and cattle. It is worth it all when you see your precious Icelanders, sick and weary of other blandishments, fall on them with the utmost greed. But do be careful. Remember that live maggots sometimes kill ducklings up to a week old and that it is easy to give too many. Drown them before feeding very young ducklings. Their skins are somewhat tough and indigestible so feed them sparingly. After the war I mean to carry my maggatorium a stage further and produce the perfect insect.

In their early weeks the ducklings expect, and must have, their first feed at dawn. You should, of course, be there to give it them in dressing-gown and slippers. While thus attired you will be led into giving them all sorts of extra attentions for their comfort and

well-being and this counts a lot—but—enthusiasm for such creatures is at its lowest ebb at this hour and you may be forgiven if instead you sneak up at night and throw a few maggots into their ponds to be ready there for the first feed in the early hours.

It is most important to see that the ducklings have the utmost amount of exercise in their restricted enclosures. Running round and round their pens is no exercise, at least it is not of the right kind. They simply must be kept on and under the water. Throw the maggots into their ponds and make them dive for them. This is their finest exercise. Incidentally the ponds should be about 14 or 15 inches deep for this very reason.

Now let us study the ills that these peculiar people are subject to, the guarding from which makes their rearing so difficult. In the first place the bantam is a fruitful source of disease. Tethered at one end of the pen she is kept as harmless as it is possible to make her, but remove the droppings every day. Whenever the days are hot and sunny take her out and put her back before the cool of the evening. If the weather be fine remove her altogether on the tenth day. Scoters are awful babies. They will continue to sit under her for weeks if you give them the chance. If they do this they are ruined. They might live, but will grow into dreadful, dried-up objects, afraid to go on the water because of the fearful drenching they would get. They have not a suspicion of natural oil in their feathers because they are suffering from Nephritis, the bane of Icelandic ducklings, largely brought about through lack of oxygen, through too much burrowing into the bantam's breast feathers. Another cause of this disease is too much fat in their biscuit meal and too little of that particular vitamin supplied by watercress which is the only kind of green food I have ever got Icelanders to eat.

Another complaint to be guarded against is congestion. Scoters are bad sufferers in this respect while they are very young. I am not now thinking of the prolonged absorption of the egg-yolk already dealt with, but of their awful greed which also causes it. I find it helps if you give them a baking-tinful of water with Epsom Salts in once a day. You can give them one of their maggot feeds in it. No doubt the leathery skins of the maggots is partly responsible.

Yet another trouble to which Scoters are particularly liable is worms. They show signs of this generally when they are three-

quarters grown by their thighs coming out of place, so that when they are on the water they are splayed out in the manner of frogs lying on the water's surface, and they soon cease to walk. One season my brother and I had a magnificent lot of Scoter. We had brought them through practically without a single loss, but when they were nearly full grown, and we were congratulating ourselves, more than half of them started going out of shape ! I got in touch with my ever-helpful friend Dr. Derscheid and was surprised to learn that they could show signs of worms so early in life. He told me to give minced garlic in their food as a preventative and curative. I have done it since and it works.

Biologically, Scoters are most provoking things. They race ahead of the other species in growth and put on meat like good sensible farmyard ducklings. You can almost see them grow and then you are tempted to relax a little your ceaseless vigilance and they crash into some stupid complaint ! But you forgive them for the fat, bouncing boys that they are. Would that Harlequins and Longtails were as frank in their failings instead of passing on through apparent discontent. Goldeneye are comparatively easy to rear.

After the foster-mothers have been removed we open up the pens by removing the separating boards, thus giving the Icelanders one long pen with an uninterrupted trough of water running throughout. This is a great advantage. It gives them greater scope for exercise while preparing them for the larger world they are to encounter later. At the same time catching them up is avoided, which does them harm in their duckling days. Any sudden change of scene at this age can only bring fresh anxieties. By the time they are three-quarters grown, however, they may with advantage be removed to a larger pond. This must contain pure water, must be reasonably deep to give them scope for diving, and must not contain masses of blanket weed, otherwise they will drown in it.

Continue to throw maggots, three times a day, into the deep water, while weaning them on to more ordinary food. This can be wheat left in the shallows so you can see how they are eating it. Also throw them best quality broken wholemeal dog biscuits containing meat, previously soaked. This becomes in time, with wheat, their staple food.

The four species *can* be reared. We have kept many individual specimens of them all for years. What is required is a method of

rearing them which will make their upbringing as great a certainty as, say, Tufted or Pochard. I am convinced this can be done if we all pool our experiences. This will be something to look forward to after the war.

The adult male Harlequin is perhaps the most arresting in appearance. In habits, too, he is extremely lively and interesting. His conversational voice resembles two bits of china being grated together. The Longtail's call is an inspiration. Personally, though, I always feel that this bird suffers more than most other duck through being pinioned from an æsthetic point of view. To me the Scoter is a completely satisfactory Duck. I like his substance, the contrast with other Ducks of his rook-black body and the brilliantly yellow boss on his bill. I like his subdued but clear whistle when he courts his Duck. And when you hold him in the hand how plump and muscular he is, how paradoxically dazzling in his sombre hue! Who does not know Barrow's Goldeneye? He needs no comment.

All these Arctic Duck have a great fascination, so has their rearing.

* * *

THE INTELLIGENCE OF DUCKS

By HENRY SEDLEY

To one who has spent the better part of his life on terms of more or less intimacy with the wild Ducks and Geese of the North American continent the waterfowl numbers of the AVICULTURAL MAGAZINE are always of absorbing interest. The last such number was no exception and in it I also found something which struck me as decidedly surprising. This was Mr. Yealland's suggestion that while the Diving Ducks are quite intelligent, the Surface-feeders are rather stupid. Over here, in America, the consensus of informed opinion, which naturally includes that of the sportsman as well as of the aviculturist, is that the Surface-feeders are infinitely more intelligent than the Divers.

Of course this difference of opinion may be because Mr. Yealland's possibly is based upon observances of species with which Americans are not very familiar and which may not have

included certain North American Ducks such as the Ruddy (*Erismatura jamaicensis*) and the Bufflehead (*Charitonetta albeola*).

I mention these two small Divers in particular because they appear almost unknown to European fanciers. While one or the other may have been exported in rare instances I believe I am correct in stating that neither has been bred outside the United States and the Dominion of Canada. This seems strange for, despite the singular lack of intelligence each displays in the protection of its life in the wild, they are exceptionally interesting and desirable from an avicultural standpoint. Especially is this true of the Ruddy, easily recognized because of its very unusual habit of carrying the tail at right angles to the body so that, with the feathers in the middle pointing straight up and all well separated and widely fanned out, it forms almost a perfect semi-circle. They are quite small, possibly the size of Common Teal, but being Divers they are of cobbler shape. While the duck is of a plain brownish colour that of the drake is mostly of an attractive reddish brown. His cheeks are ornamented with large triangular white patches and his *retroussé* bill is bright blue.

Moreover Ruddies are one of the few species of Duck in which both parents share in the rearing of the young. A pair of these small Ducks conveying with the most solicitous care their brood of tiny young naturally is a charming sight. But should danger threaten it immediately becomes one to arouse the admiration of even the most calloused observer, for Ruddies are imbued with a degree of courage out of all proportion to their small size. In defence of the young either duck or drake will hurl itself against any enemy, however formidable, and with an utter disregard for its own safety.

Once, while watching a family of Ruddies on a small isolated pond, I saw one of the ducklings suddenly dragged beneath the surface. As there were no large fish in the pond I knew the attacker must be a snapping-turtle, dread scourge of our waterfowl on fresh waters. Instantly the drake dashed to the spot, indicated by widening circles of ripples, and dived repeatedly in a futile effort to rescue his offspring. And I have no doubt that if he succeeded in locating the turtle under water that he attacked it to the best of his ability. Next day, on returning to the pond with a number of stout fishing lines, the hooks baited with pieces of meat, I noticed

that another duckling had vanished. I set my lines and on the following day had the satisfaction of hauling out a pair of snappers of about 8 lb. weight each. Had I not come to the rescue they no doubt would have accounted for the entire Ruddy family.

Buffleheads, too, are both pretty and interesting as well as small. The ducks average well under a pound in weight, though the considerably larger drakes sometimes will weigh as much as a pound and a half. In the natural state the ducks almost invariably lay their eggs in old nesting holes bored in tree-trunks by Flickers. These holes rarely measure as much as $3\frac{1}{2}$ inches in diameter, which should give one a very fair idea of the size of the ducks. The name Bufflehead is derived from the long fluffy feathers of the head which make it appear much larger than it really is. In shape it is like that of the Goldeneye. The drake Bufflehead is largely white, with a black back and his white head is ornamented with two small green patches and a still smaller one of red. The duck is greyish-black and white. Both Ruddies and Buffleheads are regularly bred by certain of our fanciers fortunate enough to be able to supply their requirements. As is the case with most Divers these are deep and clean water and an abundance of animal food, some of which should be live.

In considering the intelligence of North American Ducks it is pertinent to remark that Ruddies and Buffleheads, both Divers, show so very little in protecting their skins that they have suffered greater relative losses than any of our other species. In fact so scarce have the Buffleheads in particular become that during the open season the sportsman is permitted to shoot but three in a day. To be sure but a single Wood Duck (Carolina) may be included in a day's bag, but these always have been a comparatively rare species, while Buffleheads formerly were present in countless thousands.

Obviously the best and fairest way to judge the capabilities of wild species is to observe them under identical natural conditions. Each will then display to the best advantage such intelligence as it may possess in those two pursuits ever of the greatest importance to creatures of the wild : the obtaining of food and the preservation of its life.

For the purpose of studying in great variety the waterfowl of North America I doubt if there is a better or more accessible place

than Chesapeake Bay, on the Middle Atlantic seaboard. Fed by two large rivers, the Susquehanna and the Potomac, and many smaller streams, the waters of this great bay stretch inland a hundred and fifty miles or more from where they join the sea. They are dotted with many islands, streaked with sand and gravel bars, and the frequent broad and very shallow reaches are bordered with wide expanses of marsh, criss-crossed by a multitude of creeks and smaller waterways and pock-marked by countless ponds and pot-holes. It was along Chesapeake that much of my waterfowl education was obtained.

Here are to be found waterfowl foods in abundance, and because the salinity of the waters varies from quite fresh to as salty as that of the sea, in great variety. In short, and to use a hackneyed phrase, Chesapeake Bay and its adjoining marshes are a veritable waterfowl paradise, for in sharp contrast to the abundant food supply there are comparatively few enemies. Of these man is, of course, the most dangerous, but his hostile activities are limited to a couple of months each year.

During these two months he may legally take a daily bag of no more than ten Ducks, of which but three may be Redheads (*Nyroca americana*) or Buffleheads and only one a Wood Duck (Carolina), while Swans, Snow Geese, and Brant (*Branta bernicla hrota*) are protected at all times. In the taking of waterfowl the sportsman may do so only by means of a gun fired from the shoulder and no larger than a ten bore. The use of live decoy Ducks and the baiting of areas with grain for the purpose of attracting waterfowl is prohibited. Shooting is lawful only between sunrise and 4 p.m.

Small wonder then that once their breeding activities for the year are over there is each autumn a great gathering of the waterfowl clans on and about Chesapeake. About the only important absentees are the Eider Ducks, certain of the Snow Geese, Black-bellied and Fulvous Tree Ducks, and Trumpeter Swans, none of which include Chesapeake in their range.

Incidentally Trumpeter Swans of recent years have been showing so steady if rather slow an increase that fears for their survival in the wild are gradually subsiding. Twenty years ago, with certainly no more than six or eight pairs in the entire United States, the extinction of the species here was regarded as inevitable. These

few birds lived in Yellowstone National Park and in the adjoining Red Rock Lake district, both wild life sanctuaries, where they were and are under the more or less constant surveillance of forest rangers. Because of their great size and restricted range, for they do not migrate, it has been a comparatively simple matter to keep a quite accurate check on the birds. By 1935 they had increased to 75, and according to this year's census there are now a total of 211, of which 142 are adults and 69 cygnets. In addition to these there are quite a number of Trumpeters in British Columbia where they are as strictly protected as here. In 1936 Major Allan Brooks, who undoubtedly knows more about the Trumpeters of British Columbia than anyone else, told me a flock of 250 had spent the winter in the vicinity of Steward Lake and that there were known to be many others in various remote places. To say that there are to-day close to a thousand Trumpeters in existence probably would be no exaggeration, and as their only natural enemies are the coyote and the Raven it would seem that these magnificent and majestic birds have better than a fair chance of continued existence in their natural haunts.

Another of our species which had seemed doomed is the incomparably graceful Brant. But this was entirely due to the almost complete disappearance of eel-grass, practically their only food, a phenomenon which was observed, I believe, in Europe as well as here. The trouble at first was thought to have been due to pollution of the water by refuse oil from ships. But I understand it later was diagnosed as a disease which now appears to have run its course, for the grass has been reappearing in its former abundance and with it happily has come an increase of Brant.

One of the water-grasses which grows abundantly in Chesapeake Bay is wild celery (*Valisneria spiralis*), favourite food of all waterfowl which can obtain it and one which imparts a delicious flavour to the flesh of those which feed upon it. Its fondness for this grass is responsible both for the Latin name, *Eyroca valisineria*, of the Canvasback Duck and for its being considered an epicurean delight. The flesh of the Canvasback of the west, where the grass is not found, is far inferior to that of the Chesapeake bird. In fact it not infrequently is rank and unpalatable.

But there are times when all the celery which grew in very shallow water has been eaten and when it is available only at depths

beyond the diving powers of the Surface-feeders which then perforce must go without—all save the Wigeon. Back beyond the memory of man this canny fowl discovered a way by which it might eat its fill of the delectable grass, quite regardless of the depth at which it grew and without having to work very hard to secure it.

The Wigeon's method is the essence of simplicity. It merely joins a flock of feeding Divers, Canvasbacks let us say, and when one of these comes to the surface, breathless from its dive and with its beak full of celery, the Wigeon snatches the prize and makes off. Time and again I have lain in concealment and watched this performance through binoculars with mingled feelings. The Wigeon's actions were amusing; the stupidity of the Canvasbacks in allowing themselves to be persistently robbed by the relatively puny Wigeon, exasperating. Yet never once did I see a Canvasback show the slightest resentment. Perhaps it is that they are philosophers who regard the Wigeon as an unavoidable nuisance and that the quickest way to get their own dinners, therefore, is to see that he is served first. However this may be surely there can be no question as to which, the Surface-feeder or the Diver, shows the greater acumen. And mind you the Wigeon "plays no favourites", he will as soon rob one species of Diver as another.

In procuring its food the methods of the Diving Duck are purely instinctive, monotonously the same, and require no particular intelligence. It selects a stretch of water and makes a few exploratory dives to the bottom until it finds a place where food is abundant. Thereafter that place becomes its regular dining-room to which it returns at intervals as long as the food supply holds out.

The ways of the Surface-feeder in making its living, on the other hand, are many and various, often requiring both intelligence and initiative. It feeds both on and below the surface of the water and sometimes even on dry land. On the surface it finds floating seeds and the foliage of water plants. In shallow water it "tips up" raising the stern and thrusting the beak to the bottom in search of plant root-stocks, such as wapato, or "duck potato" and of sunken seeds. At other times it reverses the process and, lowering the stern, it scratches the bottom vigorously with its toe-nails in quest of soft-shelled clams embedded in the mud. These are not really soft-shelled at all; but their shells are softer than those of the hard-shelled clams. They are long and narrow and the larger Ducks will

swallow whole clams two inches or more in length. When rations in the marsh run low the Surface-feeder repairs to the land, there to feed on berries, grass, gleanings from the stubblefields, and acorns and beech-mast in the woods. And at all times, on land or water, he "keeps his weather eye peeled" for whatever small animal life may be about: snails and slugs, small frogs and tadpoles, insects of all kinds, shrimps, and even mice.

If the Surface-feeder cannot get food one way he tries another, and rarely indeed does he suffer from starvation as so often happens to the Diver. At times when hard weather has frozen the water over their feeding grounds in sound or harbour thousands of our Diving Ducks have starved to death simply because they had not sufficient wit to accept the tip, once the freezing process had set in, and so to fly away southward. At such times I have chopped through the ice and pulled out the floating fragments with a rake, thus forming a little pond. Almost instantly, and before I would have retired even so far as a hundred feet, such a pond would be packed with frantically feeding Ducks, many so weak they were able to dive only at widely separated intervals.

In captivity, too, the Surface-feeders show more intelligence than the Divers in securing food, or so it always has seemed to me. Rear Black Ducks (*Anas rubripes*), Carolinas, or Teal close to a garden, where a good deal of digging naturally is done, and you will be astonished at how quickly they will learn the meaning of a spade. Appear with one in your hand and every Surface-feeding duckling in sight will rush to join in the prospective feast so enthusiastically that you will have to "watch your step" lest you tread them underfoot, and your spade lest you injure them as they plunge headlong into the hole to seize any worms uncovered as the earth is lifted out. By the time such Divers as may be about become aware of what's afoot the last worm generally will have been gobbled up.

One day I took a spade from a shed, tossed it into a barrow, and started off along a garden path. My wife called out to look behind me. Trotting along expectantly at my heels were eight week-old Carolinas. Four young Goldeneyes which had been with the Carolinas remained behind on the lawn. But the Carolinas, having caught a glimpse of the spade and knowing what it portended, did not propose to be left out of a possible worm banquet. I have

often noticed, too, that young Surface-feeders being reared in captivity are much quicker than Divers to recognize danger, as in the sudden appearance of a cat, and to dispose themselves in places of safety. Of course this may be due to heredity, instinct, and the greater ease and celerity which with the Surface-feeders move on land. But the instant recognition of a spade on the part of the Carolinas certainly was not. That, I take it, was the result of intelligent observation which the Goldeneyes appeared to lack.

In the natural state Surface-feeders are quick to notice and to shy away from anything which appears in the least unusual and to which Divers often will pay not the slightest attention. Of our Divers without doubt the wariest is the Goldeneye. Yet it will pitch in without ceremony among a flock of even the clumsiest and most ill-painted decoys provided these have been set where it has been accustomed to feeding and that the gunner remains motionless, though he need not be well concealed. Certainly this is something only an exceptionally unsophisticated Surface-feeder would ever do.

A favourite shooting device on Chesapeake and other waters long has been the "battery". This is a long coffin-shaped box in which the gunner lies prone and which is then sunk to within a few inches of the surface of the water by means of weights. To keep it from being swamped by waves wide canvas floats are attached to it and spread out over the water. A couple of hundred decoys are anchored near by. Diving Ducks will come to such a "rig" without hesitation, but rarely indeed will a Surface-feeder fall victim to the battery shooter.

To entice these within range the gunner must be perfectly concealed in a quite natural-looking blind and his decoys not only must be exact replicas of living birds, but they must be so made as to ride the water in a natural manner. If the blind has been newly erected it usually will cause the knowing Surface-feeder suddenly to remember an important engagement somewhere over in the next county. For this reason shooting guides build their blinds well in advance in the open season.

Do not these facts suggest that our Surface-feeders are more clever in looking after themselves than the Divers?

As Mr. Yealland remarked the most stupid as well as the ugliest of Ducks are the Scoters, a statement with which no one over here will disagree. Years ago, before the practice was prohibited by law,

Sunday and holiday saw crowds of men and boys sallying forth from the harbours along our north and middle Atlantic coasts to indulge in an alleged sport known as "line shooting", in which Scoters were the victims. A couple of tugs would be hired, each of which would tow a dozen or more skiffs to the shooting grounds. Here the skiffs would be anchored, about two gun-shots apart, in a long line. A couple of dozen crude decoys, often no more than blocks of wood painted black, would be set out close to each skiff. The tugs, one on either side of the line and a mile or two away, then would harry the hapless Scoters back and forth throughout the day to the accompaniment of a thunderous bombardment from the skiffs.

Scoters do not like to fly either high or far and when driven towards the line by the tugs and lulled into a feeling of security by the decoys, they usually would fly straight to the nearest skiff. When fired on, instead of rising high in the air and leaving forthwith for distant parts, the poor, stupid Scoters merely would turn and fly along parallel to the line to be shot at by the occupants of skiff after skiff. In this way enormous numbers of Scoters were slaughtered. Most of them would be allowed to drift off with the tide, the rank and fishy flavour of the flesh making them anything but desirable on the table.

Although "line shooting" no longer is permitted Scoters as well as the equally unpalatable but very beautiful Long-tailed Duck (always, because of its garrulity, the "Old-Squaw" to an American) are still classed as game birds under our laws. That the shooting of either, or of Carolinas, is permitted would appear to be a black mark against our otherwise excellent provisions for the proper protection and perpetuation of wild life. Neither Scoter nor Long-tailed is fit to eat, while the Carolina, in addition to being one of the two most beautiful Ducks in existence, always has been a comparatively rare species for the very good reason that it will nest nowhere save in a hollow tree, with suitable nesting-trees becoming constantly scarcer there is more reason to-day for the complete protection of the species than ever.

Some twenty years ago when Carolinas appeared threatened with extermination they were placed on the fully protected list. Thanks to this immunity they increased in *certain sections* to such an extent that shooters demanded an open season and the present

regulation was enacted. This would not be so bad if the provision limiting the shooter to a single bird in a day's shoot could be enforced. But manifestly this is impossible, however good the intentions of the gunner may be. A shot-gun cartridge carries two or three hundred pellets. When such a load is fired, even though the shooter may have taken most careful aim at a particular bird in a flock several of its fellows are apt to be brought down. Thus it would seem that unless Carolinas are shortly restored to the protected list it will not be long before what it took twenty years to build up will have been destroyed. However, this is a matter which concerns our own intelligence rather than that of the Ducks.

By all odds the most intelligent of North American waterfowl of any species whatsoever is the Black Duck of the Eastern States. A surface-feeding Duck of large size, sometimes weighing in excess of 4 lb., it is not a decorative species because of the sombreness of its plumage which, while not black, is a dark mottled brown. However, because of the skill required to bag it as well as because of the unsurpassed excellence of its flesh I should think it would make a most valuable addition to the list of sporting birds of the British Isles, many sections of which are ideally suited to its requirements and where it doubtless would stay, for it is not a true migrant.

In spite of the fact that it lives in the most populous part of the country the Black Duck, thanks to its superlative intelligence, has more nearly held its own than any other of our waterfowl species. It long since discovered that the price of continued existence was a complete change of its natural habits. As a result it is nowadays but rarely seen by daylight except far out on open waters. Here it rests in security until with the coming of night it repairs to the marshes where it feeds.

To secure a bag of Black Ducks the gunner must be an excellent shot, have perfect equipment in the matter of blind and decoys, and finally the weather must be his ally. His opportunity comes when heavy winds render open waters uncomfortable and force the Ducks to come inshore by day. Although not particularly fast flying Black Ducks travel in straggling rather than in compact array so that to bag more than a single bird a shot is rare. Furthermore, when alarmed, as when the gunner rises in his blind to shoot, the Black Duck has the uncanny ability to rise almost straight up with amazing rapidity, thus presenting a most difficult shot.

So skilful is the Black Duck at keeping its whereabouts a secret that it frequently exists in places where its presence is not even suspected. It is even to be found living and rearing its young within the limits of great cities, as New York. This may not strike an Englishman as so very extraordinary, but it should be remembered that our shooting conditions are very different to those in England. Here any citizen may shoot on payment of a small licence fee, and an army of more than five million gunners annually takes the field. The majority of these are equipped with guns which shoot hard and straight, though lacking in the nicety of balance and extremely light weight of fine hand-made English pieces.

Under the circumstances it is extraordinary that there is anything left in the country to shoot. Nor would there be but for the increasing general improvement of the game laws, and their enforcement, and the really splendid work being carried on in the propagation and liberation of game. Almost every state in the Union maintains one or more large game farms where great numbers of Quail, Pheasants, and Partridges, including many Chukors, are annually bred and released. There are also thousands of private game farms, some maintained by individuals for the stocking of preserves, others by shooting clubs, and still others which are on a commercial basis and which sell most of their product to the states. In addition to the species mentioned these private farms also breed Mallard and Black Ducks and Rabbits. The establishment of frequent refuges, both publicly and privately owned, where wild life may find sanctuary, has also proved of great benefit.

But I am afraid I have strayed away from what I set out to discuss. In a final analysis of the intelligence of North American Ducks it may be said that the Surface-feeders in general possess so much more of this very valuable commodity than the Divers that many of them will still be with us in numbers long after most of the Divers have become scarce. And should that dark day ever come when we have left in the wild but a single species, the lone survivor, without question, will be none other than my old and highly respected friend, the surface-feeding Black Duck. Of this you may rest as thoroughly assured as you are of the ultimate defeat of Hitler, than which nothing could be more certain.

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SNOW GEESE

By A. F. MOODY

Of the four species of Snow Geese, three are pure white in colour except for the primary wing feathers and their coverts, which are black and bluish-grey respectively. When the wings are closed, this dark colouring does not show; the protruding black wing tips sticking out from the white plumage being then the only colour in evidence.

The three larger species are sturdily built and about equal in size to any of the larger British Grey Geese. Their habits and requirements in captivity are very similar to that group. On the whole, however, they appear to be slightly coarser grazers, and during deep snow will devour the tops of sedge, rushes, etc. Structurally, they resemble the grey geese and differ chiefly by their somewhat thicker bills which have a conspicuous black line, visible from the outside extending along the cutting edges of the mandibles. The group also differs from the *Anser*s in having the tertiary wing coverts more lanceolate and drooping.

Greater Snow Goose (*Chen hyperborea atlantica*).—I have but once kept an example of this large Snow Goose, but from a personal acquaintance of that and from an examination of others at fairly close range, I can quite believe that it is but a large and heavily billed edition of the next species. As a wild bird its numbers are said to be confined to one huge flock of several thousand, and its winter quarters to be restricted to the Atlantic coast. Isolated pairs have been found breeding on the east coast of Greenland, otherwise its breeding ground is unknown.

In confinement the only knowledge I have of its importation within recent years has been the several examples procured by Messrs. P. Scott and D. Haig-Thomas.

Lesser Snow Goose (*Chen hyperborea hyperborea*).—In a state of nature the present species is the most abundant and widely distributed of the genus *Chen*. Its range I understand extends over the greater part of North America, etc., and its breeding ground includes Alaska. As a wild bird it has also on a few occasions occurred within the British Isles, notably in Ireland. In confinement it may frequently be seen in the best collections of waterfowl.

It is a handsome and conspicuous bird which in the distance might easily be mistaken for a domestic goose. A closer examination, however, reveals the pinkish red legs, pink bill, and black wing-tips.

Like other Snow Geese, does very well in this country, and breeds under suitable conditions.

Blue Snow Goose (*Chen caerulescens*).—A particularly interesting bird, which except for its slaty-brown plumage appears identical with the Lesser Snow Goose.

As wild birds they winter in Texas, and the breeding ground of the species, which has only comparatively recently been discovered, is in Baffin Bay.

In confinement they nest fairly readily, provided they have suitable ground. At Lilford they usually choose nesting sites similar to the one shown in the accompanying photograph. Should these not be available, they nest upon short bare turf. During incubation, which lasts twenty-six days, the male very jealously guards the female at the nest, so jealously indeed, that having a very powerful bite, he is capable of injuring other birds. The young on leaving the nest are olive-black in colour, with lighter head and upper hind neck. They rear quite easily when running with their parents.

Ross's Snow Goose (*Chen rossi*).—I have been associated with Ross's Snow Goose for many years. They are charming subjects to keep, and are undoubtedly one of the most attractive of the smaller geese. In size they only slightly exceed the Common Brent, and are considerably smaller and more daintily built than the other Snow Geese. Their bills also are shorter and somewhat different. They further differ by frequently having a few small warty protuberances at the base of the bill, a peculiarity I understand which amongst American sportsmen has earned for them the name of Warty-nosed Wavy Goose. In a wild state the present species occurs in Alaska, etc., but has never been so abundant as its relative the Lesser Snow Goose. Its breeding grounds, I understand, have yet to be discovered, and on the whole it is by no means a common species. In confinement there is just a sprinkling of them. They do well, provided they have access to pure water and good grazing. They also nest fairly readily in confinement, a circumstance which taking into consideration, the very few wild

Ross's which have been imported, and the fact that hundreds of Brent must at one time and another have been kept without producing an egg, speaks well for this Arctic species. My own experience of the breeding of Ross's Snow Goose owing to the accidental breaking of pairs and a difficulty in renewing the right sexes, has been confined to recent years when a pair or odd females have regularly nested at Lilford. The nests have usually been made upon an island, and sometimes near the foot of a tree. Five eggs appear to constitute a clutch, the first egg of which is usually laid early in May. These are dull, almost putty white in colour, rough in texture, and measure about $2\frac{3}{4}$ in. by 2 in. As incubation, which lasts twenty-four days, commences the eggs are abundantly covered with white down. To the best of my recollection the chicks on leaving the nest are beautiful little creatures, with pale grey backs and primrose-coloured heads. They rear satisfactorily with the parents when running upon a lawn. I have found them very partial to coarse oatmeal (pin head), which they quickly learn to take from a clean board. The young when in their first feather show a considerable amount of grey on the upper parts.

The legs and feet of the adults is pinkish or purplish-red. The bill pink. Grey at the sides of basal half.

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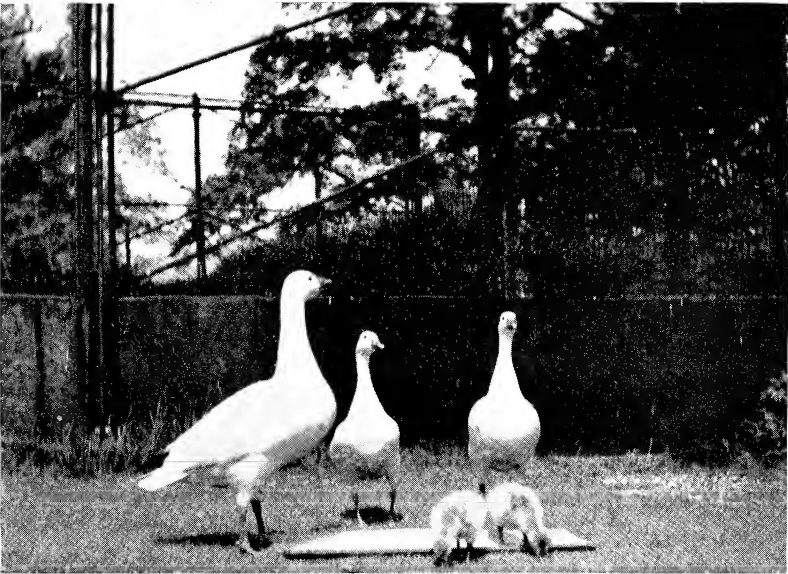
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BLUE SNOW GOOSE AT NEST.

[A. F. Moody.



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MALE AND FEMALE ROSS'S SNOW GEESE WITH CHICKS.

[A. F. Moody.



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BARNACLE X GREYLAG HYBRIDS

[John Berry

SYNTHETIC CANADA GEESE

By JOHN BERRY

The less common subspecies or races of the Canada Goose do not seem to have been bred at all extensively in European collections of waterfowl. In recent years J. C. Laidlay has successfully reared several of these birds, notably Hutchin's and the Cackling Goose. It was, therefore, with much interest but no great surprise that in July, 1941, I saw on his lawn a brood of half-grown geese, apparently of the Canada group.

One respect in which these young geese seemed to me unusual was that the black of the neck extended down on to the body, instead of terminating abruptly at the base of the neck itself. Subsequently, when examining the birds in the hand, I noted that the fore-wing was a paler grey than I had seen in any race of Canada Goose. In other characters the geese seemed to be typical members of the Canada group, yet in fact they had no Canada blood in their veins; their father was a wild-caught Barnacle and their mother a Scottish Greylag.

When, most regrettably, Laidlay decided to give up his fine collection of waterfowl at Lindores, he kindly gave me the parents and two of the young brood; the others, being full-winged, evaded capture. One of the two hybrids, from its robust build and pugnacious disposition, would seem to be a male; the other is smaller with a more slender bill and lower-pitched voice, and may be a female. When they came from Lindores on the 20th September, 1941, the measurements of the parents and of the two young, then four months old, were as follows:—

| | Wing. | Tarsus. | Bill Culmen. | Bill Breadth. | Bill Depth. | Bill Nail. | Teeth. | Weight. lb. |
|------------|-------|---------|-----------------|------------------|----------------|---------------|--------|-----------------|
| Barnacle ♂ | 430 | ? 67 | 30 | 18 | 17 | 13 × 12 | ? 19 | 3 $\frac{3}{4}$ |
| Greylag ♀ | 460 | 73 | 60 | 30 | 28 | 20 × 17 | 21/21 | 6 |
| Hybrid ? ♂ | 440 | 74 | 49 | 25 | 25 | 16 × 13 | 21/21 | 5 |
| Hybrid ? ♀ | 420 | 68 | 47 | 25 | 23 | 14 × 13 | 21/21 | 4 $\frac{1}{2}$ |

It is probable that the appearance of the hybrids will have altered considerably by the time they attain full maturity. Now, however, at the age of almost a year, they bear quite as striking a resemblance to Canada Geese as they did when first I saw them.

The white cheek patches meeting on the throat, the brown body-plumage, black neck, tail, legs, and bill are all typical characters of the Canada, and when the neck is held erect, one may fail to notice that the black extends on to the body as in the Barnacle, although to a less degree. At close quarters one can detect that the bills, apart from the nails, are becoming grey rather than black, and it is therefore probable that ultimately the bills may become more or less coloured, as perhaps the legs and feet may also.

These are not the first Barnacle \times Greylag hybrids which I have seen. Nine years ago Colonel F. G. G. Bailey showed me an example of this cross which he had at Lake. It was quite unlike the Lindores hybrids and a photograph which I took at the time suggests a dingy immature Barnacle. But inter-generic Goose hybrids do not seem to be constant in appearance, since the precise characters of the offspring are influenced by the genetic idiosyncrasies of the individual parents. I had hoped that the Lindores Barnacle and Greylag parents would have produced more broods of hybrids, which I should have expected to resemble the original family of "pseudo-Canadas". Unfortunately, however, the Greylag mother died during the winter, so that this opportunity of gaining further data on the point has been lost.

I am reminded that my first encounter with an intergeneric *Anser* hybrid occurred many years ago. So far as I can recollect, the bird was characterized by orange legs and a massive orange-yellow bill with a large black nail and a black patch on the culmen. The plumage was of nondescript grey-goose type, and since the district was frequented by a wild flock of Bean Geese I assumed that this Goose was a rare and perhaps undescribed race of that species. Further investigation revealed that it was in fact only an accidental farmyard cross between a Greylag gander and a Chinese Goose, *Cygnopsis cygnoides*.

Frequently Barnacle Geese have been observed consorting with Pinkfooted, and in some parts of the Arctic both species breed in the same districts. It is possible, therefore, that occasionally natural hybrids may occur, some of which may bear an even closer resemblance to Canada Geese than do the Lindores hybrids. Even were this established it would not suggest that the Canada Geese originated in hybridization between a Grey Goose and a Black Goose of Barnacle type, although something of the sort is

not impossible. Obviously it would be of great interest if the two Lindores hybrids could be induced to mate and produce offspring resembling themselves. But even should it prove that such crosses are inter-sterile, the mere fact that they can resemble Canada Geese so closely may prove of interest in considering the evolution and taxonomy of the Grey, Black, and Canada Geese.

Unfortunately, confusion still obtains concerning the systematics and nomenclature of many forms of Wild Geese. In my opinion, the reason for this is that the Wild Geese in general seem to constitute one of those interesting biological groups in regard to which the normal species-concept breaks down, as it does in regard to Man himself. Writing in his excellent volume on *The New Systematics*, Huxley (1940), pointed out that Man "... exhibits a peculiar form of reticulate descent consequent upon extreme migration". In several anserine forms, of which Geese of the type *Anser fabalis* are perhaps the best example, there is indication that isolations of breeding ranges, followed by expansions with consequent overlapping, have resulted in a variable degree of racial intercrossing. In a few cases aviculturists have already succeeded in showing experimentally that such hybridization can take place without noticeable loss of viability; but little seems to have been recorded as to the fertility of the crosses, either *inter se* or with a parent race.

Where distinct forms or races overlap and intercross, a zone of intergradation is produced. With Geese, these overlapping breeding grounds may lie in remote and unexplored wilds. Possibly, therefore, it is the variable intermediate birds from such areas which so often puzzle the naturalist-wildfowler observing them in their winter quarters, where he may have no clue as to their true identity.

In order to describe the character-gradients between distinct forms, Huxley (loc. cit.) has proposed use of the term "cline". The number and extent of the clines to be found in a study of the Wild Geese may make these birds somewhat irritating to a tidy-minded taxonomist. But the same factor should make them of particular interest to the aviculturist. The breeding of the scarcer races even of such common types as the Bean Goose and the Canada Goose is specially to be commended. Observations on the rearing of such birds in captivity, when collated with the notes and skins collected by arctic explorers, can be of great assistance to those studying systematics and distribution. While this aspect of controlled

propagation is widely appreciated, many breeders of Wild Geese still regard hybrids as undesirable accidents. Yet the description and measurements of a new form of hybrid may prove of even greater interest than the record of a distinct species having nested in captivity for the first time.

The fact that hybrids between a Barnacle and a Greylag can bear a striking resemblance to a Canada Goose may be of definite taxonomic significance, or it may be a fortuitous coincidence of no more than casual interest ; a decision on that point must be left to the specialists in such matters. The main thing would seem to be to ensure that the fact itself does not pass unnoticed.

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THE DUCKS OF NEW ZEALAND

By SYDNEY PORTER

(Contd. from Vol. V, 5th Series, page 151)

THE NEW ZEALAND SHOVELER (*Spatula rhynchotis*)

Buller, the great New Zealand ornithologist of the last century, described the Shoveler from New Zealand as being distinct from the one found in Australia, but ornithologists of to-day do not distinguish between the two. I am not really in a position to dispute this as I have not seen the Australian bird in the flesh. I had several offered to me whilst in Australia but the authorities refused me a permit to take them away alive.

I do think that the New Zealand bird is much brighter coloured than the Australian one, judging by skins and coloured plates.

Some years ago now I managed to get hold of four of these birds, their origin was rather obscure, but I was given to understand that they were reared on a farm from eggs taken from a nest. When I received them I must confess, being so busy and having so many birds on my hands at the time, that I did not recognize them for what they were. They were only half grown and in immature plumage, and not very interesting to look at, and I did not even realize that they were Shovelers at all until I got them home.

I had a very long voyage of about eight weeks and I found the

Ducks rather a trial, for every day I had to give them a swim in a large meat tin borrowed from the cook. This was perhaps a mistake on my part, for the birds, as they lost their natural oil whilst under the very unnatural conditions, found it hard to dry themselves and one became so water logged that it died. However, I landed three and the "Zoo" kindly had them for a time for me, and though they were full-winged they never attempted to fly away. After I had them back one of the birds assumed the plumage of the drake and I found I had two females and one male. The cock was a strikingly handsome little bird and very different from the European bird, much darker, very little white about the body and much more blue. I have seen it stated that no Ducks in the Southern Hemisphere have an eclipse plumage, but this one certainly did, and so has the New Zealand Brown Duck (*Elasmometta chlorotis*), but to a less extent.

They were quiet unobtrusive little birds and fed to a large extent on "soft-food" thrown on the surface of the water. They dabbled continuously on the surface, sifting the fine food through the comb-like lamellæ of their bills.

Such surface-feeding Ducks as the Shovelers must do an immense amount of good in feeding on the minute larvæ of such obnoxious insects as mosquitos, etc. ; but alas, no Duck ever gets any credit for any good that it may do ; to the average person its edible qualities are of the foremost importance.

As my birds had not much chance to breed with me I let M. Delacour have them. He bred them for several years, I believe, but found the youngsters very delicate and difficult to rear. I suppose they were still at Clères when it had to be abandoned. It is a horrible thought that my little birds may have made a meal for some gluttonous Nazi !

This Shoveler is not very common in New Zealand and is consequently not very well known.

The published notes concerning this and the Australian bird are very meagre. One writer states that they have an extraordinary sense of smell !. The same writer stating that they dive a lot for their food ; a thing I never found them do. No doubt in their habits they resemble other Shovelers, living in swampy districts and finding their sustenance on the surface of the water, sifting small aquatic life through their shovel-like bills.

THE PARADISE SHELD-DUCK (*Casarca variegata*)

Very few New Zealand birds flourish outside their own country, why I don't know, but this one is the exception and it is quite well known with most ornamental waterfowl keepers. One must have a very large place if one wants to keep this Duck successfully with others, for it is certainly the most pugnacious creature I have ever come across and terribly noisy into the bargain ; I had to get rid of my birds for that reason. The slightest sound of a footstep and they set up the most awful row which lasted for about an hour. The male was a real brute, he used to catch hold of my trousers in his beak and thresh my legs with the hard knobs on his wings until round about my knees was a mass of bruises. He treated my aviary attendant in the same way, and I think he would have left had I not got rid of the birds. There are few birds I have parted with with less regret than these. I gave them to a public park in the town which had a large lake, but they soon wandered away and were shot.

Once found in vast numbers in New Zealand this bird has, through constant slaughter, been greatly reduced, though it is still far from uncommon. I saw a good many on the fast flowing and ice-cold glacial rivers in the Mount Cook region and very lovely they looked when flying in the sunshine, their varied plumage showing up to great advantage against the sombre grey rocks of the mountains. They well deserved their name then, but otherwise I think they are the least attractive of the Sheld-ducks, our own bird being far more beautiful. Sheld-ducks are not birds for the aviculturists with a very limited amount of water like myself, for they treat all other Ducks abominably. In temperament and habits generally they come much nearer the Geese than the Ducks. Only Geese have such wicked dispositions as the Sheld-ducks. In fact I agree with M. Delacour that Sheld-ducks are more Geese than Ducks. They are all great grazers like Geese and both sexes incubate.

The sexes of the Paradise Sheld-duck are extraordinarily different, the female, though smaller than her mate, is the brighter in colour, she also has a partial "eclipse".

THE BLUE OR MOUNTAIN DUCK (*Hymenolaimus malacorhynchus*)

This strange Duck is the very antithesis to the last mentioned, very retiring, it is found only in far away secluded mountain torrents and is seldom seen except by the diligent naturalist or wandering woodsman. Though I went into the haunts where this bird is found on the high wooded slopes of Mount Tongariro I failed to see it, though I did find some of its feathers by the fast flowing mountain torrents. It shares with the Dipper the ability to forage at the bottoms of the swiftest flowing mountain streams, where it searches amongst the pebbles for crustacea and aquatic larvæ, especially caddis-fly grubs. The bird is helped in its search for food by the remarkable bill, which described scientifically "has the apical half of the upper mandible composed of a soft flexible skin that hangs over the lower mandible". In other words there is a flap of skin hanging over the tip of the bill which no doubt prevents the food being swept away by the fast flowing water.

Unfortunately this bird is now very rare and on the danger list. Once it was found right down into the flat country, but being tame and very unsuspecting it was soon eliminated by the settlers until now it is only found in the most remote districts. The Maoris were very fond of its flesh and they still trap it whenever they can. In fact they are its chief enemy now.

Very few specimens have ever been kept in captivity. I was fortunate in seeing a single bird in a friend's aviaries. It was exceedingly tame and liked to be made a fuss of, but in handling it I found it was very thin and in poor condition. It is a difficult bird to cater for and does not do well in close conditions. The owner stated that it used to eat flying insects which settled on the ground such as beetles, etc. It is purely insectivorous and wants fast running pure water to thrive on, which I am afraid few aviculturists could provide.

Besides the aforementioned Ducks certain Australian species have been recorded in New Zealand, namely Eyton's Tree Duck (*Dendrocygna eytoni*), the Grey Teal (*Anas gibberifrons*), and the White-eyed Duck (*Nyroca australis*), but these are only stragglers.

* * *

RAMBLING THOUGHTS ABOUT WATERFOWL

By CLARENCE L. SIBLEY

In America there has never been the widespread interest in waterfowl that gave Europe such fine collections as the one at Clères, Dr. Dërscheid's in Belgium, Mr. Blaauw's in Holland, those of Mr. Alfred Ezra, the Messrs. Stevens, Major Pam, Mr. Alan Rampton, the Duke of Bedford, Mr. Spedan Lewis, and many others in England. Probably the best (chiefly Ducks, with only a few of the smaller Geese, and a pair or two of the smaller Swans) was that of the late J. L. de Laveaga, of San Mateo, California. His collection of Ducks was really quite complete and he was most successful in breeding many of the rare sorts. Zoological parks have been notably lacking in good waterfowl collections. Now that Mr. Jean Delacour is technical advisor to the New York Zoological Society we may confidently expect that the waterfowl collections there will improve greatly. Already there is a noticeable improvement during his short tenure of office.

One reason is that experienced keepers are not to be had, and with the war conditions are much worse. My own curator, who was intelligent and had become valuable after five years of training is, like so many others, in our armed forces, as is also his helper, a lad who was learning rapidly and might under ordinary circumstances have been able to take the curator's place. In America about all that we can hope to do now is to carry along with the stock we had, increase as much as possible the more valuable species, and hope that we may not be too severely rationed on necessary foodstuffs. One bad feature is that in America we have not the numbers of birds in some of the rarer sorts to draw on for new breeding stock when death or accident has occurred. Thus some kinds (even comparatively common sorts such as Falcated Ducks, Red-crested Pochards, etc.), will be represented only by single birds or several birds of the same sex. As an example only one pair of Falcated Ducks bred for us last season, and with dependence on inadequate assistants only three young were reared, and all were males. During the winter an invasion of Goshawks took place because of the severity of winter in the Arctic, and of the birds taken three were Falcated females, one the female which nested in 1941, the other two young females which would presumably

have nested this present season. Now we have only males in this species, and no one else in America has a surplus female to offer. This is cited merely to show how easily one may have his breeding stock of a species impaired to the point of no longer being able to continue its breeding. Also it illustrates the fact that it need not be an unusually rare species. The Falcated Duck has always been considered moderately abundant in collections, yet here we are needing a female without being able to obtain one.

Until the war it was quite an easy matter to obtain South American waterfowl. And strangely enough most of the South American species seem willing to breed in this country, as witness the ease with which such Ducks as Rosybills, Versicolor, Brazilian, Chilian, Sharp-winged, Ringed, and other Teal breed soon after being imported. South American Geese such as the Upland, Ashy-headed, Ruddy-headed, Andean, etc., have all been ready to breed soon after coming into the country. Now with the menace of enemy submarines the greatly increased costs of ocean freight and maritime insurance, plus the fact that many bird collectors are in the armed forces of one or another country, importations of waterfowl from South America have practically ceased, and we in America must do our best to hold our present stocks of South American species, as well as those from other parts of the world.

Last season (1941), because of unskilled help and my own necessary absence on defence business during the spring season, we had little to enthuse about in rare waterfowl. Of course, as usual, the commoner sorts nested beautifully and the young managed, in spite of incompetent care, to reach maturity as rugged, strong specimens. The rarer sorts, as if they were aware of their rarity, either gave us infertile eggs, or else the young persisted in taking their indifferent care during chickhood too much to heart, and did not survive. One pair of Red-breasted Geese (which species has not, to date, been bred in this country) laid four eggs, and hopes were high, until we found that the eggs were not fertile. With that optimism which every aviculturist must have if he is to remain one, we look forward to the present season, with the hope that Mr. and Mrs. Red-breast will this season give us fertile and hatchable eggs. Lesser White-fronted Geese nested with seven fertile eggs. However, due to inexperienced help, the eggs were left to the Goose to incubate, and she promptly got into an argument

with a Sheld-duck, and in the ensuing scramble only two eggs were saved. These both hatched, but only one, a male, was reared. Ross Geese, with which we are usually successful, proved as hardy as oaks, and the young were safely reared. A pair of Emperor Geese hatched four fine babies and reared them to about ten days of age when a sudden rainstorm flooded their field, washed out a dividing fence, and gave the babies access to a field of unmown hay, in which were some rose beetles which they promptly devoured. Rose beetles are sure death to young waterfowl so they all four promptly turned up their little toes to Heaven.

Black-necked Swans insisted on laying their eggs so early in the season the eggs were chilled and failed to hatch. Black Swans, as always, were prolific and the young were raised safely, as were those of Mutes and Whoopers. A pair, consisting of a Whistling Swan male and a Bewick's female of the "jankowski" sub-species, nested and hatched four fine sturdy young. At the moment we had no hens available to take them as we usually do with cygnets so they were left with the mother. After five days of great care and solicitude she suddenly went berserk and killed them all. This season (if we are so fortunate as to again have cygnets from this unusual pair) the young will be given to a motherly hen or put into a brooder for rearing. One is naturally curious to see what the mature hybrids will be like. Our pairs of Whistling Swans did not nest, nor did the Coscorobas, of which we had only one very well-mated pair. Later in the season, suddenly, and with no apparent reason, the Coscorobas got what appeared to be tuberculosis and withered away.

Of the Sheld-ducks the following nested : South African, Ruddy, Common, Paradise, and Australian. We reared young of the South African, Ruddy, Common, and Paradise. The Australians nested in mid-winter and the eggs, except one, were not discovered in time to prevent freezing and cracking. The one egg, the last laid, proved infertile. Why is it that Sheld-ducks seem so much more ready to nest than do some other sorts? Also they seem very ready to hybridize. We have during the last two seasons produced some fairly attractive hybrids from an Abyssinian Blue-winged male and an Egyptian female, and this season have a Blue-winged male which has mated with one of the hybrid females. It will be interesting to see if the hybrid female can produce fertile eggs. All manner

of mesalliances seem to be indulged in by the Sheld-duck family : Ruddy \times Egyptian Goose ; South African \times Ruddy ; Ruddy \times Radjah, etc., etc. We even have a South African male which became enamoured of the male of a pair of well-mated breeding Ruddies, and before we knew it had effectively divorced the Ruddy female and taken unto himself the Ruddy male. Both males seem to feel that the arrangement is most satisfactory !

Subsequent to the nesting season we had a visit from Mr. Terry Jones and a shipmate when their ship was in an American port undergoing repairs. At that time about the only interesting nestings were those of a couple of pairs of Stanley Cranes, and our one and only pair of Grey-necked Crowned Cranes, from Major Pam, which have nested during each of the three last seasons. Mr. Jones was much interested in some young White-cheeked Geese whose legs, when immature, are unlike most of the species of *Branta*, light in colour, darkening later to the adult black. With most goslings the feet are dark, and later assume the adult yellow or red or other colour.

Ducks were nothing to rave about. Of the Tree Ducks only the following nested : White-faced, Black-billed, Black-bellied, and *Arcuata*. Of the somewhat rarer species we reared some American Ruddy Ducks and two solitary Common Goldeneyes. We have found that it is quite an easy matter to feed too much meat to some of the Ducks : Goldeneyes, Ruddy Ducks, Buffle-heads, Eiders, etc., and they suffer from digestive disturbances and fail to nest. For such species best results have been gotten by putting them into a large pond with plenty of natural food, prior to the breeding season. They then produce fertile and hatchable eggs.

In concluding this extremely rambling and disjointed article may I pay tribute to the tenacity and courage of those who are responsible for issuing the *AVICULTURAL MAGAZINE*. It has reached us without fail all during the war and is a reminder of the pleasant friendships we have made "across the pond". The writer hopes that in spite of difficulties we aviculturists will be able to carry on our hobbies with success until the end of the war, and again meet at our International Ornithological Congress to renew friendships and exchange ideas and opinions as in the halcyon days before the exponents of Might attempted to impose their wills upon those of us who believe in Right.

TREE DUCKS

(Dendrocygna)

By J. DELACOUR

At 168 East 63rd Street, in a district of New York comparable to the Mayfair of London, I sit at my desk to write on Tree Ducks for the AVICULTURAL MAGAZINE. How many times before have I sat down to write for the AVICULTURAL MAGAZINE? I started more than 25 years ago at Villers-Bretonneux, and I have done it again and again, on innumerable occasions, mostly at Clères, and sometimes also at some dear friend's house: Brinsop, Foxwarren, or Wormley. . . . To-day is Easter Sunday, a mild sunny day, and it is late in the afternoon. New York is just as nice a city to live in as Paris or London. But I always disliked cities. I look through my window and I see a row of small houses, not at all offensive, but just indifferent and disparate. A town street has always looked unlovely to me. When still a small boy I had loudly announced that I wanted always to live in the country, in the middle of a large park, where nothing ugly could offend one's view as far as one could see. It then seemed to be reasonable enough a wish and I have long pretty well succeeded in fulfilling it. But when my world goes to ruin it all seems so remote and fantastic! What now calls back to my memory the regret of a lost paradise is the sudden vision of Tree Ducks. Had I been sitting at my desk at Clères, in King Henry IV's room, only a very few years ago on the late afternoon of an Easter Sunday I should undoubtedly have seen through the large mullioned windows dozens of Tree Ducks on the wing, calling shrilly high in the sky on their evening flight. Where are my flocks of full-winged Tree Ducks now, and all the countless bird treasures accumulated at Clères, and further back in the years, at Villers? Gone with the wind. . . . I fear that in this present dreary world, at least in our lifetime, there will be no opportunities for the restoration and the continuation of such activities as the keeping of large private collections. We shall have to be content with the care of public ones, and I feel fortunate in having been given the charge of those of the New York Zoological Park. From my new office at the Bronx I see only wild woods and water, and this is some consolation. . . .

But to come back to the Tree Ducks. Among waterfowl Tree Ducks are almost as distinct from all other groups as are the very aberrant Flamingoes and Screamers. They differ widely from other Ducks, Geese, and Swans in their short, rounded body and wings. In flight they look much more like Ibises than anything else, with their long neck and broad wings. Their legs are high and their feet comparatively very large; they walk with the greatest ease and grace. They have also different structural peculiarities, and furthermore their voice, which is often shrill and whistling. Their habits and courtship differ strikingly from those of the other *Anatidæ*. The downy chicks, always so indicative of real relationships, are very peculiar in *Dendrocygna*, being small, extremely short of body, long of neck, high on the legs, and having characteristic markings, in particular a transversal light band on the nape, which is found in no other ducklings. Tree Ducks are mostly tropical—some partly migrating north to breed (*javanica* in Eastern Asia, *fulva* in North America). Their distribution is quite remarkable, and even unparalleled in birds, as one species, *fulva*, is found altogether in North and South America, Africa, India, and another one, *viduata*, in South America and in Africa. The others are distributed as follows: *javanica*, India to Eastern Asia; *arcuata*, Malaysia to Australia; *arborea*, West Indies; *guttulata*, New Guinea; *eytoni*, Australia; *autumnalis*, Central America, and its subspecies *discolor*, South America.

All Tree Ducks look charming. They have varied but always handsome plumages. They are elegant in shape, extremely attractive in their behaviour, and often become absurdly tame. Pairs have an amusing way of showing their affection in preening one another's head with their bills. Their young are among the prettiest chicks one may see; although they differ widely in colour according to the species, they all show a similar and characteristic pattern. All Tree Ducks are abundant in the wild state. Even the more local species such as the Spotted (*guttulata*), Eyton's (*eytoni*), and the Black-billed (*arborea*) are common in their restricted areas.

I have had numerous opportunities to observe numbers of them in their natural surroundings. I remember seeing immense flocks of Red-billed Grey-breasted Tree Ducks around pools in the llanos of Venezuela and in Brazil, where also White-faced were common. The same White-faced abound in Madagascar, where

Fulvous are also numerous, and on the Niger, in the Sudan. In India and Indo-China large parties of the Lesser Whistling "Teal" (*javanica*) are common in many places, and the Calcutta, Singapore, and Saigon markets used to be full of them.

Both sexes are similar and they are difficult to differentiate.

There is no difference noticeable in the habits and behaviour of wild Tree Ducks and of those kept full-winged in a park, and this is particularly striking with the charming White-faced, whose natural tameness and chirping voice are always so delightful, wherever they are found. The American Red-billed evidently comes a very close second in attractiveness, followed by the beautiful Australian Eyton's, the handsomest of all with its lovely elongated flank-feathers. All the others, shorter-tailed Tree Ducks, although beautiful, are less graceful in shape and ways.

With the exception of the rarer Eyton's and Spotted, Tree Ducks used to be freely imported and easily obtainable. They also breed readily in captivity if suitable grounds are given to them. They have the great advantage of staying well if allowed to use their wings. They are, however, sometimes quarrelsome among themselves in the breeding season, but not dangerously so in most cases. Their only drawback in cold climates is their comparative tenderness. At Clères they always remained out in the park, but it is better to confine them in a shelter when the temperature drops below 15 degrees, for otherwise their feet may be frozen.

Tree Ducks nest among reeds and other water plants, which they bind to make a rather elaborate nest, somewhat like a Moorhen's. It is not lined with down as those of other Ducks. At Clères we had every year broods of White-faced (*viduata*), Red-billed (*autumnalis*), Black-billed (*arborea*), and Fulvous (*fulva*). The others never nested. When hatched at liberty the parents very seldom managed to rear their broods, and we used, as much as possible, to catch the whole family and to place them, father, mother, and babies, into a rat-proof pen, with plenty of water and good food. It usually worked very well on account of the tameness of the birds. The male looks after his young just as carefully as the female. Often a full-winged father would join his captive family of his own accord. I kept at Clères all the different Tree Ducks, usually fifteen to twenty specimens of each species, mostly full-winged. Only once, during a very cold winter, some Fulvous and Red-bills

went away, probably in search of more open water. The larger species, White-faced, Fulvous, Red-billed, Black-billed, and Eyton's did perfectly well on the lake. But the weaker *javanica* and *arcuata* sometimes met with accidents, either attacked by vermin or persecuted by the stronger birds. They did better on smaller ponds in the company of different Teal. As to the Spotted Tree Duck (*guttulata*) from New Guinea, so rare in captivity that my six specimens were the first and only ones ever imported to my knowledge, they lived in the complete security of one of the larger duck aviaries.

To the contrary of what one might be inclined to think, Tree Ducks do not generally perch. They do sometimes stand on a large branch, but not nearly so often as Mandarins or Muscovies, for example, and they do not nest in tree holes.

The Tree Ducks of the genus *Dendrocygna* have only one close relative: the large white bird usually called the Coscoroba Swan (*Coscoroba coscoroba*) of South America. In spite of its much larger size, different colour, peculiar beak, and longer neck, this bird retains the general shape and proportions of the Tree Ducks. Their affinity had long been suggested by several authors, but until recently I rather hesitated to adopt this view. Curiously enough I never could find either a specimen or an accurate description of the downy chick which I knew would supply the key to the mystery until after the death of the late F. E. Blaauw, the well-known Dutch naturalist, I found, among his collections, a Coscoroba chick, hatched at Gooilust many years before, which had been preserved there. It was of a whitish grey, with very pale but clearly visible markings, and the peculiar nape-band was present. Since then I have had no more doubts, and I firmly believe that *Coscoroba* is a well differentiated but true genus of the subfamily *Dendrocygninae*, as none of the true Swan chicks shows any markings.

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HAND-REARING FRESH-WATER DUCKLINGS

By JOHN YEALLAND

Despite the considerable amount of extra work, the knowledge that one has almost full control over the welfare of the birds gives to hand-rearing an added interest, while one is not dependent upon parent birds whose stability is so often a matter of grim uncertainty.

Ducklings are excellent subjects to hand-rear, for they grow quickly, are often fairly tame, and are at all stages pretty and full of interest.

At Sterrebeek the system of rearing the Fresh-water ducklings was rather similar to that employed for the Sea ducklings, few bantams being used except for the actual incubation of the eggs.

Some eggs were incubated as for the eggs of domestic ducks, entirely by incubator, and good results were obtained in this way. All the actual hatching was done by incubator, the eggs being taken from the bantams shortly before they were due to hatch : in this way the hatching ducklings were saved from being crushed or otherwise killed by the bantams, while the bantams, not having been unsettled by having hatched something, were quite reliable for incubating a second clutch.

The sitting bantams were accommodated in small cubicles of brick, having an earthen floor covered with a piece of wire netting as a precaution against rats, and a thick layer of peat moss on which was made the actual nest.

By pouring a little tepid water on to the peat moss round the nest from time to time the required degree of humidity was maintained.

The Carolinas and Mandarins were, of course, among the first, and, in the case of these, the rather long downy tails, said to act as a kind of parachute when the ducklings are descending from the nest, were clipped short because they were rather apt to drag in the water and to collect duckweed.

Nearly all the ducklings were reared in brooders, having a lamp underneath which provided the necessary and very steady temperature underneath the drum inside, while no fumes could enter. The brooder floor was covered with a blanket which was, of course, changed as often as necessary. For the first few days the ducklings lived in a brooder having a wire-netting fronted run attached to it ;

the floor of the run was fitted with frames of wire gauze and at the end was a large water dish.

Until the birds were well accustomed to the brooder and to going underneath the drum, they were kept shut inside, but after a few days they were allowed to go into the run and swimming bath, and thereafter were fed entirely outside, having a small dish of water inside only at night.

At first a little duckweed and fresh ants' eggs were put into a small dish of water : the ducklings went into the water and by their movements made the food move about and, being much attracted by food which moves, were greatly encouraged to feed.

A few ants' eggs sprinkled on the backs of other ducklings were also an attraction, and so by degrees a start was made. For the more difficult ones mosquito larvæ were also put into the water.

Then, by degrees, a proprietary food composed of biscuit-meal, meat-meal, fish-meal, ants' eggs, dried flies, dried egg, and a little crushed hemp, moistened and mixed with a few fresh ants' eggs was given and the birds did well on this and duckweed. After about ten days a little vermicelli was given twice daily ; at first it was not easy to get the ducklings to eat this unaccustomed food, but they soon learned to do so when ants' eggs were sprinkled on it.

Later the ducklings graduated from vermicelli to macaroni given twice daily and eaten with great relish. The vermicelli, like the macaroni, is boiled for a few minutes, and then plenty of cold water is poured on it, for otherwise it becomes a glutinous mass. No doubt this is a good food : the macaroni was a flat ribbon-like product of yellowish colour and very cheap.

When duckweed, which is without doubt an extremely important food, was scarce, the larger ducklings were given chopped chickweed which floats long enough to be eaten, is well liked, and is perhaps the best substitute. The ducklings were, of course, given grit, while powdered cuttlefish bone, granulated charcoal, and occasionally a few drops of cod-liver oil, were mixed with the food. The cuttlefish bone was put through a mincing machine, which, being a fairly large one, ground it perfectly well, but a small machine would probably not be strong enough.

The ducklings were fed every two hours, and were given no more than they would finish within half an hour, so that they were hungry by the time the next meal arrived. When they were

feathered they were given boiled wheat mixed with the other food, and after a further week or so they received the normal adult diet of soaked grain and duckweed.

The fresh ants' eggs were really fresh, and not those pathetic dried specimens : I think they were collected from woods not far distant from Brussels. I have not seen them collected, but I think the unlucky ants are dug up, eggs and all, and laid on a cloth in the sun, and folded pieces of cloth are laid round the outside. The ants take the eggs into the shade between the folds of cloth and then comes the incomprehensible part. It seems that having put all the eggs in the shade, the ants tactfully withdraw—whatever happens the "eggs" remain alive, and are very clean indeed, having no dead ants or other rubbish mixed with them.

Naturally the Mallards and other ducklings very easily reared did not require such delicacies beyond the first few days, but such as the Carolinas, Mandarins, Shovelers, and some of the Teal needed more nursing along. We did not use gentles even for Sea-ducklings ; they are, no doubt, very good food, but it would have been difficult and expensive to buy them in sufficient quantities, while the breeding of enough for a large number of ducklings would have been a formidable undertaking. Nor did the ducklings receive any earthworms ; our sole venture with earthworms ended in disaster, some Eiders and Goosanders becoming severely afflicted by gape-worms through eating them. There were, however, no cases of gapes among the Fresh-water ducklings. At about ten days old the ducklings were moved to other brooders placed in large grass pens, and having a large cement basin of water and some artificial cover for shade against the hot sun. All, including the Sea-ducklings, were pinioned within the first five days, but generally when they were put into the brooder from the hatching incubator.

At this age the bird feels nothing, hæmorrhage, if any, is the merest speck, the risk of sepsis is very small indeed if the scissors are sterilized and the cut painted with iodine, while the bird does not suffer the least shock either from being handled or from the operation. Embroidery scissors are perhaps the best ; it is very easy to pinion the ducklings too long when they are so small, but with thin small scissors and great care this way is no doubt a big improvement on pinioning at a later age when a very poor time is had by all.

We found the whole system of rearing very good : the birds grew quickly, becoming fully as large as the parents and having a gloss and "finish" very gratifying to see.

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NOTES

EDITOR'S NOTE

When the special Waterfowl number, July-August, was published last year, I had regretfully resigned myself to the fact that this must be the last Waterfowl number till the end of the war ; with the curtailment and loss of so many collections and the spread of the war area, another Waterfowl number seemed a dream too difficult to realize. But I received so many expressions of appreciation of these special Waterfowl numbers that, being an incurable optimist, I determined to endeavour to bring out another number. I wrote to the specialists in waterfowl, and put the proposition before them, and in spite of their shortage of spare time and the many difficulties which now beset them, they one and all responded. To them is due the present number, and I would like to take this opportunity of expressing to them my most grateful thanks and appreciation. Two authors gave up their time during a few days rare leave to write their articles, another wrote his during the intervals of heavy aerial bombardments, and all have spared their small amount of leisure from some war activity.

Through the spread of the war our friends in America are now facing the same difficulties and are as much immersed in war activities as we are on this side of the Atlantic, but despite this each one I wrote to responded at once, and no less than three articles from America appear in this number.

ACKNOWLEDGMENTS

The Editor acknowledges with many thanks the permission of Mr. Roland Green, and also of Mr. James Weston, of the Ruskin Studio, to reprint the painting of Wigeon which forms the frontispiece of this number.

The Editor also gratefully acknowledges a special donation of £5 sent by Professor W. C. Osman Hill towards the cost of the coloured plate of Cassowaries which appeared in the January-February issue.

THE KELP GOOSE

There is a charming note on the Kelp Goose (*Chloëphaga antarctica*) on page 362 of Frank M. Chapman's *The Autobiography of a Bird-lover*.

Writing on a visit to Chile, he says : " Every two or three hundred yards along rocky shores a snowy-white Kelp Goose, like a sentinel, stood conspicuously in an exposed position. The brown female, if she were present, was practically invisible. The behaviour of a pair of these birds that Walcott and I saw one day convinced us of the functional value of their coloration.

With a family of six downy goslings, in single file, they were streaking along shore, the female in the lead, the male closely bringing up the rear. When we rowed toward them, the male left the young to the care of the female and boldly came to the water's edge to dispute our landing. A gallant figure he made in his spotless white, risking his life for the protection of his family. He waited until we were within twenty feet of him, and then flew to the water behind us to decoy us off shore. Meanwhile the female and young had disappeared."

In the March, 1913, number of the AVICULTURAL MAGAZINE, Mr. F. E. Blaauw, in an extremely interesting article, records how he brought back a single specimen from Chile ("My Antarctic Goose," p. 144).

"During a trip which I took in February, 1911, to Southern Chile, I had the pleasure of seeing a good many Antarctic Geese on the rocks by the water's edge in Smith's Channel, etc., and northwards as far as the southern coast of the Island of Chiloë.

"The birds were generally seen in pairs, the white male being very conspicuous, whilst it was more difficult to see the female, which is blackish-brown in colour. On the rocks round the coast of Ascension, the most northern island of the Chonos Archipelago, these birds were particularly numerous, and I occasionally saw as many as seven together."

It was on this island that "Walking cautiously along the sea shore I soon found myself in close proximity to some Antarctic Geese, which were much tamer than I expected. One pair of these birds in particular, which was standing on a rock close to the village, allowed me to admire them from a very short distance. This species of Goose is stouter and more robustly built than the other members of the genus; and the dazzling white male bird with its lemon-coloured legs and feet, large black eyes and black bill, was a most beautiful object. The female is chocolate brown, barred with white on the breast, the shoulders, back, and tail are white, the bill is flesh coloured, the legs and feet pale yellow, while a yellowish ring encircles the eyes." A captive bird was obtained from a native, and, "On my asking how it had been fed, I was told 'It will feed on anything, but you must not forget to give him Lutsche'. Now Lutsche is a kind of Kelp or seaweed which grows on the rocks in a southern part of Chile and on which the Geese feed. This is a thing which is easily procurable in the Chonos Archipelago, but decidedly difficult to obtain anywhere else, except, perhaps, in Santiago where it is sold in a dried state as human food."

Overcoming many difficulties, Mr. Blaauw brought the goose to Europe, "and on the 29th May, I had the great satisfaction of landing my bird safely at Amsterdam, and of settling him in his Dutch home at Gooilust on the same day."

JOHN YEALLAND.

ERRATA.

On the cover of the January-February and March-April numbers read Volume VII, No. 1, and Volume VII, No. 2; not Volume V as erroneously printed.

NOTICE

The Editor announces with great regret that it has been found impossible to continue with the same quality of paper as hitherto used for the AVICULTURAL MAGAZINE. Not only is this paper now unobtainable, but the ration of paper allowed is such that only by using a considerably lighter and inferior paper can the size of the magazine be maintained.

CANDIDATES FOR ELECTION

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REGINALD BOULTON, Elm Lodge, Great Coates, Lincs. Proposed by W. R. Partridge.

Mrs. PETER COOPER BRYCE, Hope Ranch, Santa Barbara, California, U.S.A. Proposed by Charles Nordhoff.

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AVICULTURAL MAGAZINE



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NEW ZEALAND TUI (*Prosthemadera novaezeelandiae*).

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JULY-AUGUST, 1942

THE NEW ZEALAND TUI

(*Prosthemadera novæseelandiæ*)

By "GARRULAX"

"The most common and certainly the most facetious individual of ornithology is the Tui (Parson-bird). Larger than a Blackbird and more elegant in shape, his plumage is lustrous black irradiated with green hues and pencilled with silver-grey, and he displays a white throat tuft for his clerical bands. Parson bird though he be, the Tui is no sullen anchorite mortifying the flesh. He is a bird of the convivial rector order, fond of honey and taking of all the fruits his rich living affords. Joyous Punchinello of the bush, he is perpetual fun in motion. He *can* sing but seldom will, and preserves his voice for mocking others. Darting from some low shrub to the topmost twig of the tallest tree, he commences roaring forth such a variety of strange noises with such changes of voice and volume of tone as to claim the instant attention of the forest. Should another Tui chance to be near he at once flits down for a sham fight, throws a somersault or two and then darts into his bush only to come forth the next minute with exhibition number two.

"Caught and caged, he is still the merry ventriloquist, mocks cocks and cats, attempts the baby, and has been known to frighten a nervous little dog off the premises. To add to his merits he becomes such fine eating in the season of the poroporo berries that an alderman might quit turtle and dare the seas to eat Tui stew."

The foregoing which, in spite of its flavour of modern "daily-press" journalism, was written nearly a hundred years ago, and though the Tui has sadly diminished in numbers and Tui stew no

longer figures on New Zealand menus, this bird still continues to be the most conspicuous of New Zealand's endemic avifauna.

Of all the native birds it is the best known. As soon as the visitor to the Antipodes makes it known that he is interested in birds, there is always the inevitable question, "Ah, have you heard the Tui?"

As the foregoing indicates there is no skulking about the bush with the Tui, wherever he lives he is always well in evidence, blustering, aggressive, and extremely pugnacious, all for no apparent reason except that perhaps he is working off some of his superabundant energy. Fortunately he is not dangerous, and this Nazi-like demeanour is only superficial and the only hurt suffered by other birds is to their dignity.

In his native haunts the Tui is never still, dancing through the bushes and trees, taking short dashing flights here and there; suddenly seeing another bird sitting on a branch, he will dash up and knock it flying off its perch. No bird goes about its daily business of life as noisily as the Tui, even his flight is noisy, it resembles the loud rustle of silk, like that of most of the "dark" Birds of Paradise.

The assertion that the Tui sings but seldom is certainly wrong, for few birds possessed of vocal powers give them so much exercise as a Tui does; he sings all the time, even captivity does not diminish his ardour. His song is highly characteristic and peculiar; quite unlike the song of any other bird; he pours it out with the greatest of gusto. In the flow of sound are many remarkable bell-like notes, but there are also many strange wheezing and coughing sounds which certainly do not appeal to the human ear, but then the Tui does not sing for human approbation—at least not usually, but I have a cock bird, who, when I talk to him, will puff out his glistening feathers until he is twice his normal size and obviously sing for my benefit.

Fifty or so years ago the Tui was well known to aviculturists in this country. Perhaps there are some of the older members of the Society who can remember those far-off days in the nineties when this bird was no uncommon exhibit on the show bench, but it is a long time ago now since the last Tui was seen at a bird show, with the exception of my cock bird which I sent to a local show some few years ago.

Of the birds imported during the closing years of the last century apparently few survived very long ; for one thing, nectar-feeding birds were not understood in those days, and the foods upon which they were fed tended to over-fatness, which is a sure cause of death in a Tui. Starchy foods such as boiled potatoes, crushed biscuits, honey, combined with lack of flying space accentuated their early demise. Fed on solid and heavy food and condemned to sit in a cage, a Tui soon gets incredibly fat. To keep these birds successfully they need a sparse diet and ample flying space.

The staple diet consists of a nectar mixture made as follows : a heaped teaspoon of Mellin's Food, a dessert spoon of best quality honey, and the same of Nestle's sweetened condensed milk in a pint of hot water ; when thoroughly dissolved we pour half into a cup and keep in the refrigerator for the next day, then make up the remainder to a pint again with warm water so that the mixture is very thin. The birds drink a lot of this but refuse to touch it if the consistency is too thick. Besides this the birds are given various soft fruits (at least before the war) such as sweet grapes, soft pears, green figs and soft berries in season. No other kinds of fruits are touched, which is understandable as the birds only eat what they can lick up with their long forked tongues.

I never give orange, as I lost my best bird through feeding on orange alone ; he refused to eat anything else and I was amazed to find that he died through over-fatness ; he was incredibly fat and his body must have weighed several pounds after death.

Tuis are very fond of flies, and in the warmer weather when the birds are outside we fix up a small wire cage which hangs in the middle of the aviary and contains a fish's head ; this attracts great numbers of flies especially when the head is rather “ ripe ” ! The Tuis are remarkably agile in catching these flies, in fact they catch them with the agility of a Flycatcher. The exercise is very good for the birds and tends to counterbalance any superfluous fat they may have accumulated during the winter months.

No bird is more strictly protected in its native country than this one, and no one, not even Zoological Societies, is allowed to keep one, let alone export them. My own birds got on to a ship which was leaving New Zealand and it was quite impossible to take them back. They are probably the only ones in captivity anywhere at the present time so it will be understood how I treasure them.

As mentioned before, I once sent the cock to a Foreign Bird Show, but I should never do this again, for the lack of exercise, through being closed up in a small show cage is dangerous. When he got back into his aviary he nearly went mad with joy, and he sang as I have never heard him sing before or since.

New Zealanders who have stayed with me in England have said, before they knew I had some of these birds, “Do you know I dreamed I was back in New Zealand this morning and heard the Tuis singing,” and I had to assure them that it was not a dream after all!

Once exceedingly common in all the forested parts of New Zealand, the Tui at the present time is only found in certain suitable localities. With the clearing of most of the native forest, the birds' food supply has gone, and it can now only maintain itself where the native flora has been left. Being a honey-sucker, the birds' food is mainly the nectar of the flowering shrubs and trees, especially the flowers of the Pohutuhawa (*Metrosideros tomentosa*) and Rata (*M. robusta*). It is a sight never to be forgotten seeing these lovely birds flitting about in the brilliant sunshine on the venerable Pohutuhawa trees, which in the summer are a mass of crimson blossoms.

These beautiful trees live to a great age and horizontally reach enormous proportions. They grow only by the waters of Pacific in restricted parts of the North Island, being found in their greatest abundance on the small islands off the north-east coast and it is there the Tuis are most plentiful.

Strange to say the birds are common on Stewart Island where the climate is far from congenial even in the summer time, and the winters are bitterly cold. One would naturally think that the Tui was a hardy creature but few birds are more susceptible to the cold of the English climate than this one. Few New Zealand birds flourish well in Europe, most of them, except the Ducks, are exceedingly delicate. I think this is mainly due to the fact that they have no immunity against diseases prevalent outside New Zealand. My birds are never put outside before June and brought in again in September. Outside they agree fairly well together but in indoor aviaries it is impossible to keep hen and cock together.

The moult is in July and August and this enables the birds to moult when outside. This is a very good thing, for a moult inside is

weakening and the feathers are never as glossy or as strong if the birds are moulted inside.

The birds are very keen on bathing and few are more fastidious. They refuse to go into water that is not absolutely fresh, and only bathe when immediately fresh water has been put in their bath. They love to have a fine spray from a hose-pipe played on them, and after it has rained they flutter about the bushes in their aviary getting thoroughly wet.

The Tui is about the shape of a Blackbird but considerably larger. His plumage for the most part is a dark shining bottle-green. The feathers of the back are a kind of metallic bronze, which glint with all colours of the rainbow when caught by a ray of sunlight. The central wing-coverts are white and form a conspicuous bar on the wing, though this is seldom seen except when the bird is in flight. Old males in perfect condition seem to puff out the breast feathers when they sing, in the form of a heart-shaped shield ; this is more or less formed by the long side and flank feathers which increase in length with age. My cock bird does this both when he sings and when I talk to him. The Tui has two peculiar features not found in any other bird ; a “ mane ” of fine grey filamentous and hackled feathers, which somewhat remind one of old lace, on the back of the neck and which fall in little curls towards the throat. The most striking feature, however, is a snow-white tuft of filamentous plumes which curl into a little ball on the throat, though sometimes there appears to be two of these balls. The construction of these feathers is very strange, for they are not separate but grow on the tips of the ordinary throat feathers in two sections which cross each other. These tufts resemble, on a small scale, the little white “ pöi ” balls used by the Maoris in the “ Pöi-dances ”, hence one of its names, “ Pöi-bird.” These little balls wobble about all the time the bird sings. After death these tufts lose their shape and become uncurled. So one gets no idea what they are like from a “ stuffed ” bird. They then bear some fancied resemblance to the white throat-bands which clerics used to wear in the eighteenth century, and the early naturalists, seeing only the skins, called it the “ Parson-bird ”, a name by which it was known to the old time aviculturists.

The Tui feeds, besides nectar, on insects and berries, as there are few flowers in New Zealand in the winter time. I have often

watched the birds behaving like giant Tits, assuming all manner of positions ; searching the undersides of leaves, nicks and crannies in the trunks of trees, balls of dead leaves, and even under the eaves of houses for insects. My own birds when put outside in the late spring make a systematic search of their aviary, putting their long tongues in between chinks of the woodwork, feeling if there are spiders there.

In the old days the Tui was a favourite article of diet with the Maoris and large numbers were potted down for winter use, the birds being caught during the season when the “ porporo ” berries are ripe, after feeding on which they became very fat. The old bushman and settlers also highly esteemed the Tui as an ingredient of pies. Its shining feathers were also used in the manufacture of the Maoris famous feathered cloaks.

It has been stated that the bird was commonly kept by the Maoris as a pet, and it was “ the only bird which the Maoris taught to talk and for this purpose they trimmed the end of its tongue ”. This latter assertion is ridiculous, for being a honey-sucker the bird would quickly die should its tongue be cut.

Both sexes sing, though I think the male is the more voluble. They sing all the year round, usually all day long, except when moulting ; even then the cock sometimes does a little tuning up.

Few birds make such an attractive pet as this one ; he is always full of high spirits and no birds, not even Canaries, sing as much in captivity as this one ; though his charm, I am afraid, will never be appreciated again outside his own shores, for the exportation of any of these birds out of New Zealand is very unlikely. The following is taken from *Bird and Forest*, the organ of the New Zealand Native Bird Protection Society, and gives a good idea of the wild life of the Tui :—

“ This is the gayest and most aggressive bird in the forest, noted throughout the land for its extreme rapidity of movement, the gloss and sheen of its plumage, the wild outbursts of joyful notes, its general air of bustle, happiness, and gaiety. We know it as one of our main honey-eaters. To enable it to collect the nectar from rata and kowhai and other honey-producing flowers its tongue is furnished at the tip with a brush of exquisite fineness. It is a beautiful sight to see these charming songsters clinging and swinging in grotesque postures on the brilliant crimson blooms of the rata,

sipping the nectar and flying every few minutes to some bough to gladden the forest with an ecstasy of song. In the winter they may leave the bush and visit civilization to feed on the nectar provided by the tree lucerne and certain eucalyptus which flower at this time. Then in early spring the kowhai groves are visited by flocks of Tuis, the trees echoing with a continuous peal as the birds practise their acrobatics in obtaining the nectar from the pendulous flowers. Berries and insects, many of the latter caught on the wing, supplement the diet.

“The Tui is at all times a lively and active bird, with flight rapid, graceful, almost undulating, the rustle of wings plainly audible. Delight is found in combined display. ‘Perhaps ten or even more will turn, twist, throw somersaults, drop from a height with expanded wings and tails or perform other antics, till, as if guided by some preconcerted signal, they suddenly dive into the forest and are lost to view.’ The varied notes of this, our most remarkable songster, continually break the stillness of the bush. Although thoroughly joyous only in the full glow of sunlight, it nevertheless sings earliest in the morning and latest at night of all the bush birds. It is remarkable for the variety of notes as well as the versatile manner of delivery. A medley of musical notes will intermingle with chucklings, clicks, and clucks; beautiful liquid sounds will be followed by a noise not unlike the breaking of a pane of glass or perhaps a series of gentle sobs; dainty whisper songs alternate with coughs and sneezes. After sunset the wild revelry ceases. Until darkness sets in the song consists of a succession of notes like the tolling of a distant bell.

“The nest is placed in the fork of a bushy shrub or perhaps among the leafy tops of a forest tree. Fairly wide and shallow, it often has an untidy appearance because of the interlaced twigs and rootlets which project in all directions. These twigs are often mixed with coarse green moss; sometimes cobwebs are used to hold them together. The cavity is lined with fibrous grasses or the black hair-like substance from young tree-fern fronds, and occasionally with feathers. Three or four eggs are laid, variable in form and colour, but usually white with a faint rosy blush and lightly freckled all over with pale reddish brown or marbled with rust-red veins. The Tui is a courageous bird, and will allow no others in the vicinity of the nest. If an intruder approaches a nest

with young, one bird always on the watch will give a piercing alarm cry which attracts other Tuis to the spot. While the hen bird is sitting the male will perch on a high tree, and throughout the day pour out his soul in song. The hen will even sing on the eggs, a most unusual occurrence among birds. During the first week the young are fed entirely on insects, but later berries such as fuchsia are added to the diet."

* * *

THREE WEEKS WITH THE GAMBIAN BIRDS

By Sir B. H. BOURDILLON, G.C.M.G., K.B.E., F.Z.S.

An enforced sojourn of nearly three weeks at Bathurst last February, with no work I could possibly do even if I had wanted to (which I did not), gave me an excellent opportunity of adding to my knowledge of West African birds, and I was lucky enough during that time to see no less than 150 different species, 60 of which I had not seen in Nigeria. Most of my time was spent around the swamps and in the "bush" between Bathurst and Cape St. Mary, but I was lucky enough to get a week-end's trip up the river, and I also visited Brufut and other villages a short distance from Bathurst. Government House, the residence of my kind hosts, Sir Thomas and Lady Southorn, housed a good many species, including a Peregrine and a Gold Oriole, in its beautiful garden. A Gambian Blue-breasted Kingfisher gave me a magnificent view of himself there one morning; Bronze Mannakins and Red-billed Fruit Finches were always busy in the shrubs and Speckled Pigeons on the roof, while the long-tailed Glossy Starlings kept up a raucous chorus, especially when the Peregrine was about. One morning I saw two other long-tailed species, the Black Magpie and the Senegal Wood Hoopee (a dull bird when compared with the Guinea species), in company with the Starlings in one corner of the garden.

The first stranger to catch my attention was a Woodchat, which I afterwards found fairly commonly. The only other Shrikes which I saw were the Gambian Puff-back, the Senegambian Long-tailed Shrike, and the Barabary. The latter, looking almost like

a Blackbird as he flies away from you, has brilliant scarlet underparts and a bright yellow crest. His call consists of two beautifully liquid notes, with an interval of exactly an octave. Sometimes the high note comes first, sometimes the low, and occasionally the low note (but never the high) is repeated twice without the other. The lady answers with a harsh double click which either follows immediately after or more rarely coincides with the second note of her mate's call.

Birds of prey were very numerous. Vulturine Fish Eagles were everywhere. I saw only one Sea Eagle, but no less than six Ospreys, one near the coast and five during my up-river trip. Others, besides the Peregrine, were the African Hobby, the Lizard Buzzard, the Red-necked Kestrel, the Eritrean Shikra, the Gabar Goshawk, Wahlberg's Eagle, the Grasshopper Buzzard Eagle, the Black-crested Hawk Eagle, Montagu's Harrier, and the West African Harrier Hawk. The Montagu was good enough to fly slowly round me, displaying very clearly the distinguishing black bars across his wings. The Harrier Hawk was fairly common and several times I watched him probing, presumably for insects, among the bases of the fronds of palm-trees.

Of Herons, the commonest was the Reef, which I saw everywhere, near the coast and up-river. The somewhat similar, but handsomer, Black Heron, I only saw once. Squacco were more common than in Nigeria, but the Green-backed Heron much less common; I only saw one. Up-river I saw Goliath and Black-headed Herons, and Grey and Purple near the coast. Other birds seen up-river were the Woolly-necked Stork, the Wood Ibis, Sacred Ibis, Haddada, Great Egret, Lesser Egret, Cattle Egret, African Darter, White-fronted Cormorant, Crested Crane, Spur-winged Geese, and the not very common Bronze-winged Courser, which I shot thinking that he was some kind of Plover that I did not know.

Of Plover I saw the Spur-winged and Senegal Wattled Plover frequently, the Grey once or twice, and the Ringed Plover fairly often.

Whimbrel were seen up the river and in a swamp near Bathurst, with an occasional Curlew in the latter place. This swamp also produced Pelican (very common up the river), Wood Ibis, and on one occasion African Spoonbill. I was not at first

certain that the latter were not Great Egrets, but as they rose against the evening sky their bills were unmistakable.

One small swamp, less than half an acre in extent and absolutely next to the main road to the aerodrome, usually managed to hold something of interest. It was the only place where I saw Black-winged Stilt and Black-tailed Godwit, and it also produced Red-shanks, Greenshanks, and Green Curlew and Common Sandpipers. On the other side of it one day there were a lot of Least Bee-eaters. The White-throated Bee-eater was fairly common, and up-river I saw the European Bee-eater displaying himself to great advantage in a tree, which also contained three native beehives !

The Yellow-bellied Parrot was common, the Long-tailed Parrakeet less so. The Senegal and Blue-breasted Rollers were common, the Broad-billed Roller I only saw once, out at Brufut, where I also saw the Bearded Barbet, the only Barbet to show himself.

One morning I visited the creek near the Municipal Incinerator. The foreshore was thickly lined with Turnstone and Ringed Plover, while behind them were a large number of White and Blue-headed Wagtail ; a Yellow Wagtail also, I thought, but could not be sure. Among the Wagtails, of all strange things, was an unmistakable Tree Pipit. He seemed a bit ashamed of both his company and his surroundings, as directly he saw me he flew up into a stumpy bush which was the only tree near, and proceeded to preen himself with his back to his garbage-hunting companions of a minute before !

An unusual sight out at Brufut one morning was an ungainly procession of no less than forty-nine Allied Hornbills. The Grey and Red-beaked Hornbill I saw frequently. The Grey Plantain-eater was fairly common. The Violet Plantain-eater I only saw once. I thought I identified him a quarter of a mile away, and he most obligingly flew straight over me and confirmed my first impression.

Among the small fry, besides Mannakins and Fire-Finches, the Orange-cheeked Waxbill and the Cordon Bleu were seen on several occasions. The only warblers I was able to identify were the Willow Warbler, White-throat, Common Fantail, and Short-winged Grass Warblers.

Of Gulls I saw only two, the Lesser Black-backed and the

Atlantic Islands Gull, but of Terns several, the Caspian, Royal, Sandwich, Little African, and Bridled. A sandbank off the coast held at least fifty Caspian Terns at one end one morning, and a rather smaller number of Oyster Catchers at the other.

The Gambia has not many attractions to offer the visitor, but I hope that this rather catalogue-like account of my short stay there may attract others to follow my example in more peaceful times. In spite of the excellent work done by Bates and Bannerman and others (including Dr. Hopkinson, all too little of whose knowledge is, alas, available in print) the field for further work in West Africa is very wide.

Of all the pleasant memories of my short stay in Bathurst one, I think, will always stand out. It was at Brufut one morning, and I was looking at an unknown (to me) Weaver in the top of a mango tree when my companion, a young Air Force Officer who had a morning off, called my attention to a small thorn tree not twenty yards off. The lower branches were absolutely crowded with small birds which, on inspection, proved to be twenty or thirty Cordon Bleu, and a smaller number of Lavender Waxbills, absolutely jostling each other as if on a perch in a small cage. It was the first time I had ever seen the Lavender Waxbill, and I had not the faintest idea what it was. Out came our note-books and "Crimson back, rump, tail and upper and under tail coverts, remainder lavender grey, with black eyes and lores" was what I wrote. A further examination of the bush, for it was nothing more, showed Bulbuls, Weavers, and Brown Babblers, and when I walked up to it after the birds had gone, I flushed a Long-tailed Nightjar. I could see no insects, nor anything else to account for this extraordinary collection of birds.

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DISADVANTAGES AND ADVANTAGES OF HAND REARING SOME OF OUR NATIVE SPECIES

By V. A. V. CARR

It seems rather an extraordinary circumstance that those birds which in their natural state are, in habits, both shy and reclusive, when reared by hand away from their parents make ideal pets with little inclination to stray from their owners and new habitations. Particularly is this so of the *Corvidæ*, which includes Ravens, Jays, Magpies, Choughs and so on. Can one envisage a more retiring bird than a Raven? Found in hilly districts and rocky coasts where the human creature seldom intrudes and then only when circumstances compel, it lives on carrion meat and fresh meat if occasion demands.

And yet, if taken from the nest as soon as it has a few feathers and reared by the human hand, one has a bird almost as faithful as a dog and as intelligent. If simple phrases are repeated regularly the Raven can be taught to talk as plainly as it is possible to speak, especially if one voice and the same phrases are used at regular intervals.

The Magpie, a wily, cunning, and very shy bird by nature, likewise makes a wonderful hand-reared pet. My sister reared one eight years ago and it used to be housed near the garage. No particular effort was used to teach this bird to talk, until one day he used a phrase, "Where are you going?" quite distinctly and to the pleasant surprise of those around. Nobody had deliberately used this phrase for his special benefit, but being situated near the garage he had apparently heard it many times.

This bird, named "Sal", could be released all day if necessary as he would stay around, sometimes walking around the lawn, flying in the house, and wandering on the tops of other aviaries. This wandering about tended to upset other aviary inmates as he used to have many impolite pecks at them, and for this reason was confined to his own quarters. One weakness this bird possessed was for ladies' legs—whether they were covered with silk stockings or not and if one was not watchful he would fetch blood, in a very impolite way mind you!

The Raven we possess, "Bill" by name, is over ten years old to date and says very distinctly, "What do you want?" "Come

on then," "Wow, wow, wow." If some tit-bit is offered and the phrases uttered Bill will repeat them until you come to the latter one and then on the demand "Bark!" he will reel off the "Wow, wow, wow". We get much amusement from watching the expressions of those who have not heard this bird talk, as the voice is so human and certainly more distinct than a lot of voices I have heard.

For birds of this size it is rather amazing how little they will eat and will go a long time without food or water. This, no doubt, is due to their rather precarious livelihood, gained in desolate areas with the chance of sneaking some dead sheep from mountain crags or scraps from Buzzard and Peregrine eeries usually found in such quarters.

The Jackdaw, not quite so prone to such shy behaviour, but very cautious and watchful, looses all this when reared by hand, and if treated quietly and not frightened will grow very attached to his owner. I have not heard one speak very distinctly but they will say "Jack" in a more human way than they do when wild. They get very fussy, putting their crests up and their heads down for a scratching, delighting, no doubt, in the sensation that is caused.

The Jackdaw we possess will follow the car for miles flying alongside and settling through the sliding roof and riding on the driver's shoulder. If one stops he will fly off, returning immediately his name is shouted, and even in a town he will find his owner and settle amongst a crowd.

For beauty one cannot beat the Jay, especially if it is a cock and colour fed when moulting.

One could recount many interesting tales and experiences gained from their birds, but the star turn was a Jay which, when liberated would go and sit on top of a high tree. Some unsuspecting person would stand and gaze at him marvelling at this beauty until a cigarette was offered and accepted by the victim. Upon being lit, Mr. Jay would immediately dart down from his lofty perch snatch the cigarette from the victim's lips and disappear again, leaving a trail of smoke and a very disgruntled admirer!

Carrion Crows make very delightful pets especially if one is disposed to acts of playful annoyance. They will chase all the dogs in the district, swooping down and pecking their tails, whilst the dogs make valiant but vain attempts to snap. They usually get shot at, coming home with broken legs or, more often than not,

not returning at all, making one wonder exactly who had done such a rotten trick.

In this respect, one year we reared a nest of Jays, which had their liberty for quite a long time until one day a neighbouring farmer very sorrowfully brought three back dead. Being neighbours one did not like to put into words exactly what one thought of this horrible act, but his words of apology were : " I thought they were taking my eggs so I shot one, not knowing they were yours. The sound of the explosion sent over two more, which I downed in the same way, and as I was picking them up one squawked which attracted another which settled on the end of my gun. Then I realized they were yours and had been reared by hand."

All these types of birds are easy to rear and quite easy to keep, especially in these days of lack of oil seeds which are imported. Odd scraps, meal, bread, fowls' innards, fish-heads, and any other offals do admirably. If kept clean both in their nests and when they emerge, and treated gently, they will remain faithful until the end. The usual fate that a lot suffer is to fall in a tub full of water, and one is well advised to cover all water butts with wire netting.

On no account release these birds just before, during, and after the breeding season, as they usually want to find a mate and sometimes they make off, not to return with their mate, but to disappear with him or her as the case may be. The Chough likewise is an ideal pet when hand-reared, and I have never had the pleasure of doing this. Those that I have seen are really beautiful and one cannot believe they are in the same group as Magpies, etc. Their curved bright bill and bright red feet with such a glossy feather effect and their charming disposition make them very desirable. They are more delicate feeders, shouting the house down, as it were, if they view a tin of mealworms.

It is a great pity that one has not the time and hardly the right inclination to delight in the charm of nature these days. But when better days return and one's mind can more easily absorb and delight in these wonders of nature what better joy could there be than to look up to the sky and instead of Spitfires, Wellingtons, and Hurricanes zooming about, Jays, Magpies, and Jackdaws hurtle down to one's shoulder looking for tit-bits which now even we ourselves are denied.

(To be continued)

A COLLECTION OF SMALL BIRDS IN NEW JERSEY

By JEAN DELACOUR

I have spent an early June week-end in the country, with my friends Mr. and Mrs. Milton Erlanger, and for the first time in many months I have had the time, and everlasting pleasure, to watch aviary birds. This may sound strange, as my present position of Technical Adviser to the New York Zoological Park gives me the control of the mammals, birds, and reptiles, and our collection of birds is the best now existing, numbering 1,800 specimens of 700 species, about half of which are perching birds. But my duties are many and absorbing, with planning, committee meetings, and office work, and I have little time to do more than quickly examine the birds in our Zoo. Mr. Lee Crandall, the Curator, and Head Keeper George Scott, themselves overworked, are both excellent aviculturists, and I rely upon them to take care of our birds. Although we almost entirely lack suitable outdoor accommodation, so necessary to many species, the condition of our collection is excellent, the longevity of our birds being quite remarkable, with losses at a minimum. But, as I have just said, our outdoor flights are almost non-existing, a deplorable state of affairs which would already have been remedied if the war had not brought in additional difficulties.

It is therefore quite a delight to be able to visit garden aviaries such as those we were used to in England and in France. Mrs. Erlanger, an enthusiastic bird lover and a fine aviculturist, has only a few years ago gone in for bird-keeping on a large scale. Her first interest has been dogs and her kennel of poodles is one of the best in the world. However, she always kept cage birds.

Her present installation consists of several outdoor planted aviaries and more are now being completed. They are located along or close to her beautiful house at Elberon, on the coast of New Jersey, in her pretty and shady gardens. Along the western wall of the house, beyond a spacious veranda, one first finds a small bird room, with several fixed cages, two of which constitute the shelters of an outdoor aviary. This consists of two communicating compartments, 12 feet wide and 10 feet high, each 15 feet long. This length of 30 feet runs along the house, several windows

of which open in the aviary itself, and afford excellent observation posts. The far end of the second compartment is made of vitrex panels, and about 3 feet of the roof next to it is glassed over. The aviary is shaded by two large maples, the big trunks of which pass through the wire roof. The flights are both quite thickly planted with various ornamental shrubs, and the outer partition is overgrown with honeysuckle and other vines, so that the birds are almost invisible from outside and can only be seen either from the bird rooms or through the windows of the house, quite a pleasant arrangement, which ensures a cosy and intimate habitat for them.

The inhabitants of this aviary are numerous and their condition is wonderful, as is also their tameness. I have spent several hours feeding and watching them, and although I have certainly missed a number of species, I have noticed the following ones : Shama, Daurian Redstart, Brown Solitaire, Clarino, Chinese Grey-breasted Thrush (*T. hortulorum*), Loo-choo Robin, Blue-winged Pitta ; Finch-billed, Red-vented, Red-eared, Chinese, and Yellow-vented Bulbuls ; Black-headed Sibia, Fairy Bluebird, Colombian Barbet (*Eubucco bourcierii*), Bearded Tit, Purple and Yellow-winged Sugarbirds, many Tanagers including Blue, Mountain Blue-and-Yellow (*Compsocoma*), Red-rumped, Yellow-rumped, Crimson-backed, Black-headed, Blue-and-Black, Grey, All-green, Spotted, Superb, Blue-headed, Desmarest's, Blue-winged, Arthus, Cayenne, and Yellow ; several African Waxbills (now very rare in America), Avadavats and Australian Grass Finches ; European Goldfinches, Siskins, Redpoll, and Linnet, Red and Black-headed Siskin, Crested and Pileated Finches, Pink-headed Fruit Pigeons, a perfect hen Blue-backed Manakin, three years in captivity and carrying nesting material. But I must stop this enumeration and leave out some of the more common birds, or those which I have not detected.

All these birds are put out in the beginning of May and removed to heated winter quarters at the end of October. American summers, on the East Coast, are a good deal warmer and more humid than those of England and Northern France, and therefore much more favourable to tropical birds—a fact rarely acknowledged by aviculturists in this country, and which accounts to a great extent for the scarcity of outdoor aviaries in this part of the world. Many birds nest annually in the aviary just described. If a number do

not succeed in rearing their young to maturity, as always happens in a large, mixed collection, quite a few do raise a family, particularly hole-nesting species. Parson and Shaft-tail Finches both had young at the time of my last visit.

A short distance away, behind a charming rose garden, stands a double aviary, the back two-thirds of the roof of which is protected by vitrex. The two compartments, each 12 feet by 15 feet and well planted, are used as breeding summer quarters. One contains a pair of Bullfinches, the only ones in America, this rather rare and beautiful bird being stupidly considered dangerous as a possible breeder if liberated, and consequently now barred to enter the United States. They nested last year, but did not rear their brood, and they have not yet started this season. There are also seven or eight pairs of Gouldian Finches that were very successful last season, a pair of Rufous-tailed Finches, one pair of Red Siskins, and a pair of Chinese Quail, also successful last year. The other aviary is the home of two pairs of Red-headed Parrot Finches, a pair of Diamond Doves, and a pair of Bleeding-heart Pigeons, all nesting.

A little further away, three compartments of an old dog kennel, whose inhabitants have now been removed to another farm, have been transformed into very practical aviaries, each with a roomy shelter and a long, outdoor flight. Many more will be completed when conditions permit. One contains a pair of Nicobar Pigeons, a Dyal Bird and two hand-reared and absurdly tame Orange-rumped Tanagers. The following one is inhabited by the only pair of Scarlet Cocks-of-the-Rock ever seen in a private collection. They were brought over last December by Charles Cordier, are extremely tame, and in perfect condition. They do not quarrel at all and may attempt to breed. The last compartment contains a pair of Grayson's Doves.

Although most of Mrs. Milton Erlanger's time is now taken by strenuous war work, particularly the organization of "Dogs for Defence", she still has time to supervise her bird collection, keep it going, and even increase it. Our English colleagues who manage to maintain theirs in spite of tremendous difficulties will be happy to hear the same spirit is prevailing here, and will prevail whatever may come.

RUMINATIONS OF A BIRD OWNER

By FRANCES E. MATTHEWS

Those who agree with Keats that "A thing of beauty is a joy for ever" will apply that thought to their birds and their flowers.

The "spirit of beauty" is personified in such treasures. We find special joy when the sunlight brings out the rainbow hues in our birds' plumage, and at the same time rouses them to song or some special evidence of their love and trust in us.

The flowers, too, seem to quiver into more joyous life when seen in sunlight split by a gentle shower.

Midst all the sadness, and the sordid cares, can we capture some thoughts upon Nature's lavish gifts and find a table in the Wilderness.

A father once would teach his little son (during their walks) to find the purpose for the existence of every gift bestowed on man by the Creator's hand. He asked him "Why did God make the flowers? What use are they?" The child thought long then said: "I specs He made them to amoose Himself."

May we not say with reference to our birds that many of them seem to have stood within the rainbow's circle to obtain their glorious primary colours! Were they not given us to speak of hope and the promise attached to the bow in the cloud! They should cheer us now when life is run in the minor key. I have ventured to dwell on beauty in birds, but there is also the comfort derived from their company, and the pleasure of guarding them for others to enjoy in future years.

Many bird lovers owning a varied collection could write a valuable diary of their observations which others would appreciate greatly. My knowledge is a limited one and some species have been given up owing to present restrictions. Amongst the Finches, the Gouldians painted in rainbow colours take pride of place. Owing to the severe winter a small crowd of them lived in an alcove wired off a sitting room with a large window. They have space to fly.

"There's good luck in odd numbers" (and safety?) said Rory O'More in the Irish song. I thought the same and left my cocks and hens together. But the birds seemed to think it was nesting

time, so I found my old pair had made a nest by the radiator, and another pair dragged hefty tussocks of grass to some spot over the blind and near the ceiling. All their arrangements were being interfered with by a very lively last year's cock not yet in colour. A room adjoining mine contained amongst others a Shama, a Budgerigar and a Zebra Finch, ages between seven and five years—the latter two in a partitioned cage. With early morning sounds the Shama breaks into song. For some time I feared he would not bear the change of food, but since through the kindness of a friend I obtained mealworms and have bred them, this bird is quite fit now. He often copies the Parrots' whistle downstairs or imitates the Budgerigar.

Being companions for so many years the Finch and Budgerigar come out together daily and fly about. Standing on one's head and shoulder. The Finch is often put in my pocket, but he returns to his former post and starts his song again, nothing daunted.

The Zebra has never got over the insulting way the Budgerigar imitates his Castonet (*Castanotis*) song sung for my benefit. The imitation is so good that it is hard to detect it from the original. To make it complete the Budgerigar adds a bit of ventriloquism. First he gives Finch's song, then the indignant remonstrance from him *both* produced *together*. The small bird stands up to the big one and drives him off frequently. But the Budgie tries to feed the Zebra and talks to him in endearing terms all day long.

Our female Grey Parrot is very verbose, and has rather a good repertoire. We had her very young and she came ten years ago. Her seed diet has had to be supplemented a good deal. At meals, she repeats the word "Well" several times. If that fails, "Is it nice?" Then as her hopes of attention wane, "Is it all gone?" War-time buns are a speciality. She walks about the room and then I find her climbing up on my knee, where she behaves very well. She finally has her drink of tea and morsel of bun.

This tale becomes commonplace and homely. I would it might provoke someone in their spare moments to share with us their birds' diary.

OBITUARY

JAMES B. HOUSDEN

It is with much regret that we have to record the passing of one of our oldest members, Mr. James B. Housden, on 11th July, at the ripe age of 92. He was a keen aviculturist all his life and took a great interest in our Society since its foundation in which he took an active part.

Well do I remember my first meeting with Mr. Housden nearly half a century ago. I called at his house at Sydenham and he took me to see his birds which were housed in very business-like aviaries in his garden, I was impressed by the number, their fine condition and the many rare species, most of which were new to me in those my early days of aviculture.

Just before I left, he took from his pocket a proof of the first number of a new magazine, to be named *The Avicultural Magazine*, the Journal of the Avicultural Society which had just been founded. I was very pleased when he offered to put me up as a Member.

In those days his foreign birds were always to the fore at the annual Crystal Palace show, and many were the prizes he received for his rarities.

He never lost his great interest in birds and even spent part of the last evening of his life in looking at his favourite bird books.

In his old age he took more than one trip to visit a nephew in Texas, and in spite of a rough and somewhat dangerous journey in the wilds of that country, for one in the late seventies, enjoyed his experiences to the full as may be gathered from his articles entitled "The Call of the Wild" in the volumes of our magazine for 1928 and 1929.

D. S-S.

* * *

NOTES

THE OCELLATED TURKEY

It is well known that the Ocellated Turkey (*Meleagris ocellata*) is a decidedly difficult bird to rear.

It may, of course, be that in nature the young are specialized feeders, but in captivity it seems that they do not so much go wrong from any particular cause, but rather that they take full advantage of all the disastrous things that can happen to them.

However tame they may be, they remain stupidly temperamental, and no doubt this is a serious obstacle to their early progress. Writing of his visit to Chichen, Yucatan, in 1896, Frank M. Chapman, in his book, *The Autobiography of a Bird-Lover*, gives an account of an attempt to rear a large number of these birds. It is true that the attempt was made nearly fifty years ago, but it will

be seen that it was carried out in the birds' native climate and under a variety of conditions.

"The one bird of all others that I hoped to see about Chichen was the Ocellated Turkey, which is found only in Yucatan, and the adjoining parts of Central America. That a bird of such economic value has not been domesticated is significant. The Spaniards found the Wild Turkey (*Meleagris gallopavo*) of the Mexican tableland in the possession of the Aztecs and introduced it into Europe, whence, as is well known, it was carried to North America. But although Chachalacas and Curassows are common inhabitants of Mayan dooryards, the Indians had not succeeded in the taming of the Ocellated Turkey (*Agriocharis ocellata*).

In spite of the inference to be drawn from this fact, Dr. Gaumer, stimulated by an offer from Boucard, a bird dealer, of six hundred dollars for each bird delivered alive in Paris, determined to attempt to rear them. In view of the efforts that have been made from time to time to introduce the Ocellated Turkey into the United States, the results of Dr. Gaumer's experiment, as he recounted it to me, are worth recording. He purchased about 430 eggs of wild birds from the Indians at prices ranging from twenty-five cents to one dollar a dozen. They were set under hens and domesticated Mexican Turkeys in the city and in the country, numbers of people being entrusted with sittings in order that the chicks might be brought out under as widely varying conditions as possible.

About 400 eggs hatched. The town-born chicks succumbed first, and, at the age of two days, would suddenly droop their wings and die. At the end of three months 300 birds were living. During the succeeding three months the mortality was high, and at the end of six months only 37 birds remained alive. Eight months later there were but 14 survivors. With these Dr. Gaumer started for Paris, but by the time he reached Progreso only four remained. He, however, continued his journey, and reached New York with two birds apparently in a dying condition. These he sold to Reiche, an animal dealer, for \$100 each. Reiche exhibited them on Coney Island and with the aid of flaring posters cleared \$1,700. The birds had now recovered their health, and Reiche sold them to an European Zoo for \$500 each. It is possible that if the causes of death were known they might be combated and the birds successfully reared, but it is not probable that they would thrive outside the faunal zone of which they are natives."

JOHN YEALLAND.

* * *

CORRESPONDENCE

THE CONGO PEACOCK IN CAPTIVITY

Captain Delacour thinks that you and the readers of the AVICULTURAL MAGAZINE would be interested to hear of the success Mr. T. Herrling and his wife have had in keeping captive examples of the Congo Peacock (*Afropavo congensis*). Nearly a year ago I learned that Mr. Herrling had sent two eggs of this interesting bird to the representative of the Musée du Congo Belge at Leopoldville. Towards the end of January Mr. Herrling himself wrote me how they were secured.

In 1938 he was sent as Agent Territorial to Jhela in the Upper Tshuapa District of the Belgian Congo. After spending some time in that vicinity, he persuaded natives to secure a few living Congo Peacocks for him. The first was an adult male, which soon died. Next he obtained a pair, they were very wild at first; but when placed in a roomy, shaded cage they gradually settled down, and for about six months they thrived under the devoted care of Madame Herrling. By the time the male bird sickened and died, another pair had been

added to the aviary, so there remained one cock with two hens. The trio lived peacefully for five months, and then one of the hens made her nest in a dark corner, on the ground, and laid three eggs of a light rufous-brown colour. One of these eggs hatched on the 26th day after incubation began. The hen performed all the duties of incubation, but the newly-hatched chick was cared for especially by the cock, under whose wing it spent the night. Unfortunately this buffy-brown chick died on its fourth day, and its skin could not be preserved.

Mr. Herrling left Jhela in May of last year, but he believes that one pair of his Congo Peacocks still survives there, and perhaps it will be possible to transport them to the Zoo at Leopoldville. At any rate, his experience proves that it is possible to breed *Afropavo* in captivity, and strengthens our confidence that the birds will be seen in zoological gardens of Europe and America soon after the present war has been won. It may be recalled that during the summer of 1939 Captain Delacour was considering sending Mr. Charles Cordier to the Congo to secure some. Had it not been for the protective regulations and the outbreak of war, the beloved Chateau de Clères might have welcomed the first Peacock emigrants from the Congo.

Most cordially yours,

JAMES P. CHAPIN.

THE AMERICAN MUSEUM OF NATURAL HISTORY,
CENTRAL PARK WEST AT 79TH STREET,
NEW YORK, N.Y.

* * *

LOST KING PARRAKEETS

The Hon. Mary Hawke writes on 12th June :—

I have moved from Henfield to Partridge Green, and I could not get my big aviary moved, so put my breeding pair of King Parrakeets (after 14 days in a large cage) into an open roof aviary. There was a tremendous gale here on 26th and 27th May and the roof blew off and was smashed in the night. Next afternoon the cock came and called in the oak trees near and fed on the buds ; the next day he was seen with the hen, but after that he lost her for a few days and I heard no more till ten days later I heard they were together at Bines Green, about 2 miles away. Can any breeders help me in any way ? I should like their advice. Is there any chance of getting them in the autumn ? I am afraid they will be shot. I am willing to pay £5 for their return.

MARY C. HAWKE.

OAKFIELD,
THE LANE,
PARTRIDGE GREEN, SUSSEX.

[The Editor accepts no responsibility for opinions expressed in Correspondence.]

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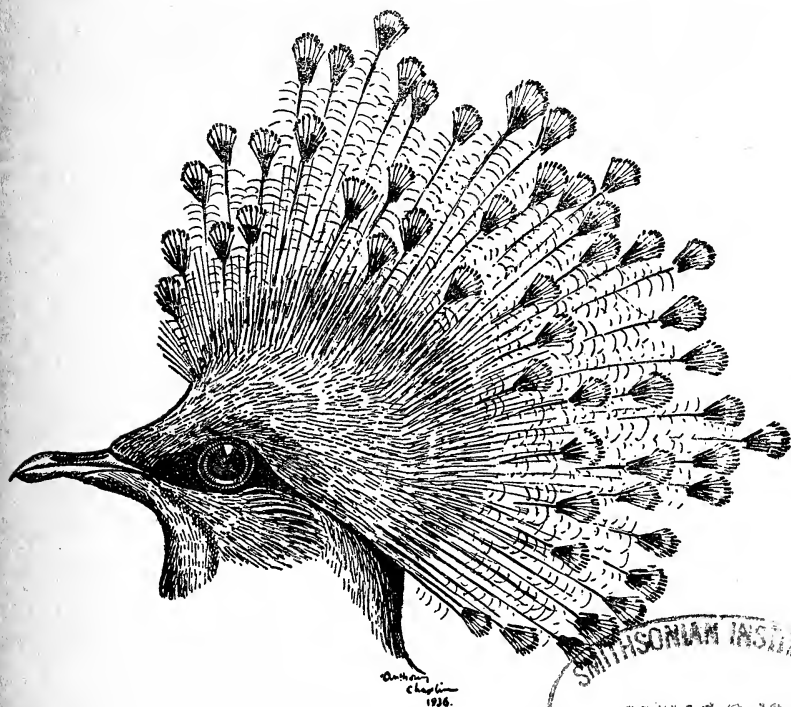
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AVICULTURAL MAGAZINE



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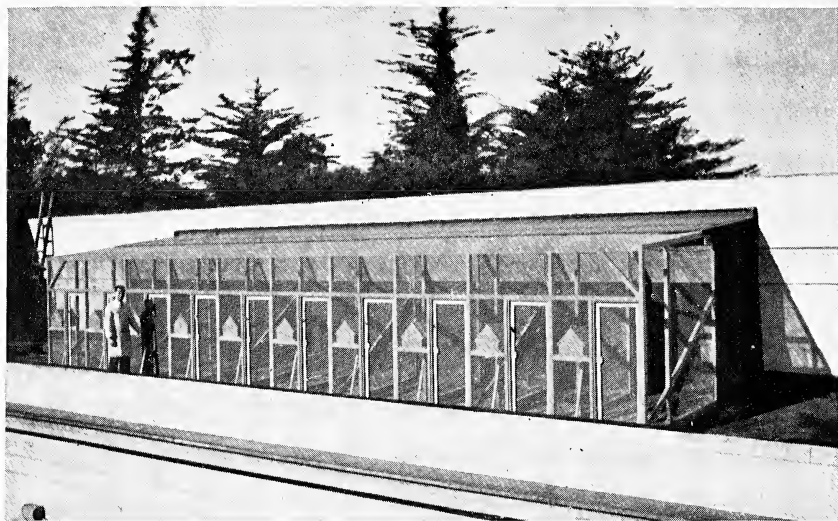
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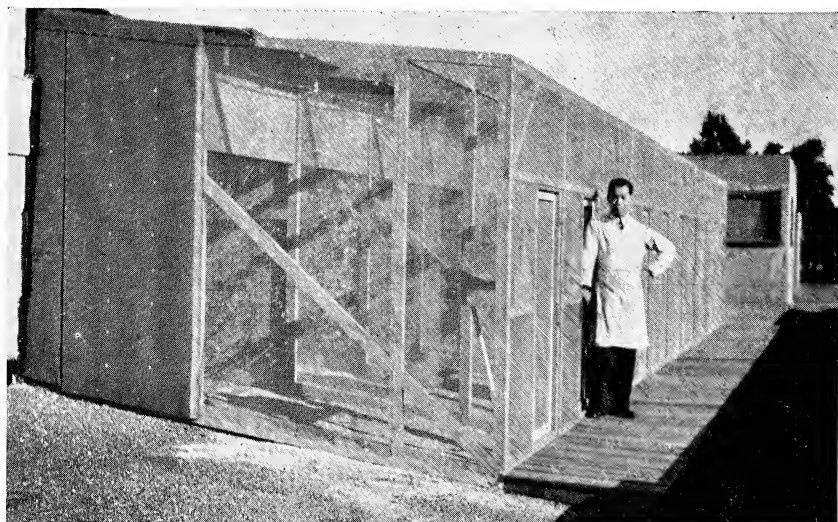
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A CLOSE-UP VIEW FROM A SIDE ANGLE.

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SEPT.—OCT., 1942

THE BREEDING OF GALAPAGOS FINCHES IN CALIFORNIA

By ERIC CAMPBELL KINSEY

In the December, 1938, issue of the AVICULTURAL MAGAZINE, a brief notice appeared to the effect that a scientific expedition would shortly leave Great Britain for the Galapagos Islands.

This expedition, headed by Messrs. David Lambert Lack, L. S. V. Venables, and W. Hugh Thompson, and sponsored by the Royal Society and the Zoological Society of London had, among its objects, the capture and study of certain of the ground Finches of the genus *Geospiza*, which, it will be recalled, was of particular interest to Charles Darwin who headed the first scientific exploration of the Islands more than a century ago and who wrote of them in *The Voyage of the Beagle* and *The Origin of Species*. These Finches, because of their environmental isolation, have developed many interesting characteristics, sociologically as well as structurally.

The expedition reached the Islands in mid December, 1938, and proceeded to make extensive studies of these Finches in their natural habitat. Subsequently, a number of the birds were trapped and held in aviaries on the Islands in an attempt to hybridize them, but the experiment was not successful. However, prior to leaving the Islands in April, 1939, Mr. Lack and his associates were successful in procuring thirty-one live birds which he installed in cages made of wooden boxes to which had been attached the usual travelling wire fronts, the latter having been brought with him from England.

It was intended to ship these birds to the Zoological Society of London which was to carry on breeding and hybridizing opera-

tions. The birds had been collected at the end of the breeding season, with the result that they began to moult heavily almost as soon as they left the Islands, consequently they were in quite poor condition by the time they reached Panama. A rough voyage to that point plus unsuitable food made a bad matter worse. The threat of war was a further complication, and Mr. Lack, deeming it inadvisable to continue with the original plan, secured by cable the Zoological Society's permission to turn the birds over to the California Academy of Sciences at San Francisco. The Academy, having no facilities for the caring of live birds, asked the writer if he would accommodate them until such time as proper provision could be made for their care.

Accordingly, the Finches arrived in San Francisco on 29th April, 1939, and were immediately transported to Manor, Marin County, which is north of San Francisco Bay. It is there that the aviaries, housing the California native bird collection belonging to the writer, are situated.

Because of their condition the birds were not released in the aviaries but were transferred to roomy holding cages and placed under artificial light. Before being released they were calipered by Mr. Lack and Dr. Robert T. Orr, of the Academy, after which they were banded (ringed) with special aluminium bands for proper identification purposes.

There were four species of *Geospiza* represented in the original thirty-one specimens, three *magnirostris*, four *fortis*, twelve *fuliginosa*, and twelve *scandens*. However, one of the latter had died en route so that but eleven *scandens* reached Manor.

In measuring and banding the birds it was noted that the tongue was slightly bifid (i.e. "brushed"), and Mr. Lack, in answer to queries by the writer, stated that these Finches had been observed to eat soft fruit and buds growing on the Islands. He was not certain that they sipped nectar but thought they might have done so. With these facts in mind, the writer placed these Finches on a Mellin's food, honey, milk and water mixture used for other brush-tongued birds. A mixture of native California wild seeds was also given them, plus sow thistle and dandelion flower heads and leaves. Meal worms and an insectivorous mixture were later added to the regimen of few individuals who were more or less emaciated.

These birds arrived on the eve of the writer's departure on a collecting trip to the Arizona desert, and their care was necessarily delegated to others for a temporary period. When the writer returned home three weeks later it was discovered that two of the *magnirostris* and one of the *fortis* had crushed the aluminium bands in their legs, and that in the case of the single female *fortis* blood poison had set in which made amputation necessary. The other bands were loosened and removed; however, the damage was done so far as *fortis* was concerned for, of the four species received, this was the only one not successfully bred in subsequent months.

It was hoped that an expedition sent to the Galapagos Islands by the Field Museum of Natural History of Chicago, in the early part of 1941, would be successful in bringing back other living specimens of *fortis* so that the females of this species might be obtained, by exchange or otherwise, to replace the crippled female, but that expedition had only indifferent success in the collection of live specimens of these Finches.

The birds were kept in the holding cages at Manor until the moult was completed and a proper food regimen could be worked out. In the meantime plans were being made for the construction of breeding pens at the Academy which is situated in Golden Gate Park in San Francisco.

A major consideration for the selection of this particular scientific institution as the one to which the collection should be entrusted was that it had previously dispatched expeditions to the Galapagos Islands, which expeditions had done a great deal of work along the systematic line on the so-called Darwin's Finches. Because of such previous activities, all members of the Academy staff were keenly interested in what, for them, was a new and novel departure, viz. the study of *living*, rather than the ordinary case specimens. Dr. R. C. Miller, the Director of the Academy, James Moffitt, Curator of Mammalogy and Ornithology, and Dr. Robert T. Orr, Assistant Curator, all participated in the several conferences held for considering the proposed accommodations planned for the breeding of these birds. It was the writer's thought, based on many years of experience in the keeping and breeding of our native California avifauna that the aviaries should be located behind one of the Academy buildings, where natural and rather heavy growth could be wired in, not alone for the nesting seclusion such

an environment would afford, but also to provide a possible small supply of living insects which, it was supposed at the time, the young would require for successful rearing. Certain objections were made by the Academy officials to this proposed site in the garden, principally because park personnel and visitors could not very well be excluded from the grounds of the Academy and the birds would suffer from lack of privacy. Therefore, it was finally determined to build the pens on the roof of the west wing of the Academy and subsequent evidence demonstrated the wisdom of this choice, notwithstanding the writer's original scepticism as to the ultimate success of breeding operations there. The work was completed in early November and the birds were released in the aviaries on 16th November, 1939.

The aviaries were ten in number of a size 10 ft. long, 7 ft. high, and 4 ft. wide. The accompanying illustrations show the details of their construction. They face south-east and are protected from the strong prevailing north-west winds which usually blow in from the Pacific Ocean which is some 3 miles distant. A maximum of sun is therefore provided. However, it should be emphasized that the close proximity to the ocean creates a good deal of fog both morning and evening, thus approximating the weather conditions of the Galapagos. It is the writer's thought that this proximate climatic paralleling of the original habitat exerted considerable influence in the successful breeding experiments which followed.

It will be noted from the illustration that part of each aviary was enclosed in the usual orthodox fashion, also that a covered perch was installed in each of the pens just outside the shelters. The cages, being built on a gravelled roof, suggested the advisability of using the same type of gravel in the flights, and this was done. Cut brush was placed in each of the shelters and small wooden gabled-roofed feeding trays, open only in front and of an approximate size of 1 ft. by 1 ft. by 1 ft., were attached to the front walls. Most of the food was placed in these receptacles; however, some has been fed on the gravel floor in good weather.

Prior to their release in the pens, the birds had been taken over to the Academy from Manor and were there held for several weeks, which afforded an opportunity for those at the Academy to learn the routine of their care. As previously mentioned, one of the *fortis* succumbed at Manor from the effect of the band crushing.

Subsequently, one *fuliginosa* and one *scandens* died from natural causes prior to their release in the pens. Thus twenty-seven birds were originally placed in the aviaries. There were five more casualties during the first few weeks after their release and, in the writer's opinion, these losses were clearly attributable to the abrupt change from inside holding cages to outside aviaries, particularly at the very start of our winter and the approaching proximity of the birds' normal mating season. Of these casualties, two were *fortis*, two *fuliginosa*, and one *scandens*. It is interesting to note that there was only one death (a *scandens*) of the remaining twenty-two adults during the succeeding year, viz. 1940. In the same year another *scandens* escaped accidentally. Late in 1941, one other *scandens* died from natural causes, and in 1942 two more died; one *fuliginosa* also succumbed. Thus of the thirty original birds received at Manor, there are still living on this 24th day of June, 1942, three *magnirostris* (casualties none), one *fortis* (casualties three), nine *fuliginosa* (casualties three), and seven *scandens* (casualties four). Of the original adults still living nine (one *magnirostris*, six *fuliginosa*, one *scandens*) were sent to the Zoological Society of New York in February, 1942, in order to afford additional room at the Academy for further breeding experiments which contemplates utilizing young reared in San Francisco since 1939.

At this point a description of these ground Finches is in order. The colour of all four species is almost exactly the same, but varies in the sexes.

Adult Male.—Uniform black except that the under tail coverts are more or less broadly margined with white or pale buff.

Adult Female.—Dusky appearing, more or less mottled or streaked below, under tail coverts and centre of abdomen being dingy white. Feathers on breast and sides with blackish streaks, feathers on upper parts generally black or dusky centred. Colour of bill: black during breeding season, pinkish-yellow during balance of year; however, this characteristic is extremely variable in captive specimens. Feet blackish, tails proportionately short. *Magnirostris* is about the size of a Grosbeak and is the largest and largest billed of the four species. Its bill greatly resembles that of the Grosbeak, being large and "gross". *Fortis* is the next largest and largest billed, and is about the size of an English Sparrow; a veritable smaller edition of the larger *magnirostris*. *Fuliginosa*, the smallest

of the Geospizids, is about the size of a Junco and is a vest pocket edition of its larger relative. *Scandens* is also about English Sparrow size, but the bill is considerably longer and not so thick, proportionately, as that of the other species.

It will, of course, be understood that the normal breeding season of these equatorial Finches ranges from mid December to April, and it would appear it is correlated with the rainy season for, according to David Lack, it is sometimes extended into June or even later when the precipitation is exceptionally prolonged. The San Francisco birds, like other species brought up from south of the equator, immediately adapted themselves to the seasons here in California and bred roughly from March to November ; indeed in some instances there was evidence of nesting activity extending throughout the entire year. One of the *fuliginosa* laid eggs during every one of eight consecutive months, at the end of which time nesting material was removed from the aviary. Her record was ten clutches with a total of thirty-one eggs.

But little aggressiveness was noticed as between individuals of the same or different species when kept together in the same cage. A pair of *magnirostris* kept in the same cage with an adult male *scandens* built nests, laid and incubated eggs, and hatched young with only inconsequential sparring between the two males. It was quite apparent that aggressiveness varied more or less with different individuals, both within a species and with the different species. This lack of uniformity in the breeding behaviour pattern may have been influenced, at least in part, by the comparative small areas of the breeding pens ; that is to say, that breeding males in adjoining pens were often necessarily in closer proximity to each other than would have obtained in their natural state, thus tending to break down, or at least constrict, possible normal aggressive characteristics.

They were found, however, to be quite inquisitive, carefully examining new birds or objects placed in the pen. They also exhibited a degree of tameness not found in most other birds. Mr. Lack, however, told the writer that he had not found them as tame in their natural habitat as they were reputed to be and not at all comparable, in this respect, with certain other Galapagian species, viz. Mocking Birds and particularly Vermilion Flycatchers, which apparently had almost no fear of humans ! However,

because of this *comparative* tameness every care must be taken in entering or leaving the pens of these Finches if escapes are to be avoided.

As the breeding season approaches, the males evidence the fact, first by increased song, then in the usual sparring and driving so well known to aviculturalists, and finally by the carrying of nesting materials. Posturing and displaying on the part of the male tends to increase while the nest is being built. In connection with the song of the Geospizids, it was noted that individual differences between the males of the same species were much greater than between males of different species. No two males of the same species appeared to have identical songs. All songs consisted, mostly, of a series of rather unmusical notes made up of one, two, or three syllables joined together and repeated either slowly or rapidly, but always shrilly. Additionally there were single call-notes given. It was further noted that rain acted as a stimulus to song, a phenomena noted many times previously by aviculturalists as being applicable to species coming from the tropics where rainfall is of frequent occurrence.

The male frequently builds one or more nests prior to any sign of similar activity on the part of the female. Nests are occasionally torn down and are transferred to other locations; again, completely new nests are built. Females, in breeding condition, may accept one of the nests the male has already completed, adding to it a bit or may start construction of an entirely new nest. Both sexes work on the nest that is to be used but usually the majority of the work of such nest is done by the female, notwithstanding the fact that the male almost continuously carries material in his bill, at the same time posturing and singing. The material supplied them for nesting was dry grass, rope fibre, sisal hemp, and old nests of local birds. The nests were usually cup-shaped and domed over, the entrance hole being on the side; however, numerous modifications with respect to shape and construction occurred, as for instance nests which were completely uncovered, or only half covered. Again two, instead of one, entrances were noted.

Nests are *normally* built by these Finches on the ends of very fine branches of bushes and trees 4 or 5 feet above the ground and are composed of long grasses and lichens similar to those

that hang from oak trees. However, in the pens, nests were built at any and every height and in almost all locations. Most of them were lodged in crotches of the cut bushes placed in the shelters, and were, of course, composed of the materials previously mentioned as having been given to the birds.

During the breeding and nest building periods, numerous experiments were made with the use of mirrors and mounts in order to obtain as complete a behaviour pattern as possible of all four species of these Finches. The results from these experiments, while extremely interesting to scientific ornithologists, are deemed by the writer to be without the scope of this paper. However, it may be said in passing that no differences were apparent in the manner of posturing and display as between any of the three species subjected to these observations, viz. *magnirostris*, *fuliginosa*, and *scandens*; experiments of this nature with *fortis* were not possible, the single crippled female of that species having died right after its transfer to the aviary. An attempt made to breed the surviving male *fortis* to a female *magnirostris* failed, and although the male *fortis* regularly sang, no sexual display was observed.

Pair formation was usually rapid as soon as the female arrived in breeding condition. In some instances individuals that were strangers to each other copulated within a few seconds after being placed together and almost immediately thereafter co-operated in the construction of a nest, with eggs being laid in a few days. Of course there were cases in which either the male or female of a species was late in reaching an advanced sexual condition and in those instances maladjustments were evident.

The number of eggs laid varied from one to five, with three or four representing the usual clutch. Coloration is the same for all species, being white speckled with brown. The size varies, being proportionate and relative to the size of the individual species. Eggs are laid on succeeding days with incubation starting upon the deposit of the last egg. The period of incubation was determined to run from eleven to thirteen days with twelve days the usual rule. The foregoing variation is not a *specific* difference, as the extremes applied to all species.

Courtship feeding, a regular occurrence in these Finches, consists, as a general rule, of the male feeding the female by regurgitation. A continuity of such feeding varies both within the

species and between the species. It usually begins a few days prior to the first egg being deposited and may or may not continue until after the young are out of the nest unless, of course, another set of eggs is laid when it may continue on without interruption. The usual procedure of the females fluttering their wings, as would young birds, occurs during the process.

After the young are hatched they are fed by both the male and female and this continues until the nestlings are ready to fly, when the male, as a general rule, assumes the full burden. However, there are exceptions, for it was noted that in some cases the female continued to do a certain amount of feeding even while she was incubating a new clutch of eggs. There were other instances where the males attacked the young after they had left the nests, but before they were capable of feeding themselves, and it was found necessary to confine the males in order to prevent injury to the young. In those cases the female continued feeding the young. It was observed that the captive young failed to develop as fast as young in the wild, nor did they leave the nest as early. Further, they were dependent for a longer period on their parents. This retarded development may have resulted from diet and also may account for the attacks by the male on newly fledged young, as such attacks occurred at the time the fledgelings would normally attain independence in their natural habitat, and as a consequence, be driven from the nesting territory.

As has been the experience of most aviculturists in breeding birds of other species, occasions occurred when males would kill the young or would remove them from the nest as soon as they hatched. Diet, again, is at least in part responsible for these attacks, as has been demonstrated many times in the past. However, the writer has long since noticed that native California species as, for instance, Mountain and Western Bluebirds, *Sialia currucoides* and *S. mexicana occidentalis*, which have nested and successfully reared their young each year for almost a decade in the aviaries at Manor have, upon occasions, killed and removed the young immediately after hatching, *notwithstanding* the fact that they were provided with an ample supply of live insect food (grasshoppers, locusts, etc., a food normally used by them for rearing young in the wild), if too much disturbed by other birds in the same aviary or by too much human observation or interference. Also young pairs nesting

for the first time invariably did so. With Darwin's Finches it was definitely noted that the habit ceased after two or three broods of young were so destroyed, which tends to confirm the writer's long held idea that nervousness, fright, or outside interference, regardless of source, is as much, if not more, to blame for such attacks than diet.

The appearance and development of the young are very much like that of other Finches. A scanty amount of down first appeared, then feathering started at the age of four days. The eyes opened at five days. The time of leaving the nest varied both with individuals and by species, running from twelve to seventeen days. They were fed after leaving the nest for from twelve to sixteen days and longer if their parents could be induced to continue the task.

The writer gained the impression from Mr. Lack that the Geospizids reared their young in their natural state on regurgitated insects, at least during the callow period. And as a result, he was not over optimistic as to the success of the breeding operations which were to be attempted in San Francisco, unless an adequate supply of live insects could somehow be obtained. This was one of the reasons for his objections to the breeding pens being built on the roof rather than on the Academy grounds where, as previously mentioned, it was thought a small supply of insects might be naturally afforded. Of course, it was assumed that the usual mealworms and gentles might permit the successful rearing of a few young. Prior to the breeding season, an arrangement was made with a fish bait manufacturing company for the processing of grasshoppers with glycerin ; just enough of the latter being used to keep the insects, which had been previously dried, soft and pliable. This particular food was offered to the adult birds, which at first appeared frightened by the insects, but gradually learned to eat them.

Much to the surprise and gratification of all concerned, it was determined upon the hatching of the first nest of these ground Finches, that they did not *exclusively* require live insect food with which to rear young in captivity, indeed, they performed that function admirably and in almost all cases on regurgitated seed ! Thus several nests of the three species of which there were breeding pairs, viz. *magnirostris*, *fuliginosa*, and *scandens*, were reared without the necessity of procuring live insects, and what a necessity that

can be in the case of so many species of the *Fringillidæ*! The same mixture of wild California seeds, with a small addition of some domestic seeds like canary, millet, etc., was used, plus the Mellin's food mixture and the various greens previously mentioned.

It is probably true that the young of these Finches receive a substantial portion of insect food in their wild state, and probably the retarded development heretofore mentioned would not have occurred in the captive young had an equivalent part of their diet contained a higher protein content. It may be that the dried grasshoppers supplied to their parents helped to balance their diet and substantially contributed to their successful rearing.

During the year 1940 twenty-nine nestlings of all species were hatched from fourteen broods, of which fifteen nestlings were reared to maturity. Of four broods of *magnirostris* eleven nestlings hatched of which five nestlings were reared; from five broods of *fuliginosa* there were nine nestlings hatched of which six nestlings were reared; of the *scandens* nine nestlings were hatched from five broods, of which four nestlings were reared.

During the year 1941 breeding operations were temporarily discontinued with *fuliginosa* and *scandens*, because of the overcrowded condition of the ten pens. One pair of *magnirostris* built a nest and laid a clutch of three eggs which hatched on 14th July. One of the young was found dead the next day and the two others the following day. In the same aviary was a *scandens* male, and although no serious fighting was observed or any other interference on the part of the *scandens* with nest building, it is entirely possible that its presence caused the male *magnirostris* to kill the young after hatching.

As previously stated, nine of the original adult Finches were sent to New York early this year (1942) in order to relieve the congested condition of the aviaries. However, for some reason, there has been but one nest built to date, viz. 24th June. This nest was one of the *fuliginosa*, and but one nestling hatched and it only lived for seventeen days. It was deficient in feathering which may have accounted for its short life.

It was found impossible to procure an additional supply of dried grasshoppers this spring, and this may have some bearing on the lack of success of breeding efforts in 1942 to date, and this, notwithstanding the writer's scepticism as to the value of this particular food for the purpose indicated. It is possible that our

extraordinarily late spring may also be responsible ; our native species in the aviaries at Manor and those nesting in the mountains of California were almost a month late in starting to pair this year.

Present breeding pairs for 1942 are : one pair old *magnirostris*, one pair young *magnirostris* ; one pair old *fuliginosa*, one pair of one old and one young *fuliginosa* ; two pair old *scandens*, one pair of young *scandens*. Additionally, there are a number of young *fuliginosa*, *magnirostris*, and *scandens* which have not been put up for breeding and, of course, there is still the one remaining old male *fortis*.

A staggering amount of detailed observations embracing behaviourism, moults, and moult sequences, bill coloration, song patterns, oological particulars, etc., all in addition to the more or less general data covered in this paper, have been made by Dr. Robert T. Orr, the Assistant Curator, who has borne the full burden of the physical care, maintenance, and research in connection with these Finches. Dr. Orr, with unusual courtesy, permitted the writer to study his complete series of notes and MSS. on these Finches and without this information, the present paper could not have been written. This consideration was extended, notwithstanding the fact that Dr. Orr will shortly publish a somewhat similar, but more detailed, paper for an American zoological publication, and later, a completely scientific manuscript for the more exact ornithological field.

Additionally, the David Lack manuscript, a minute and detailed report of the Lack-Venables expedition and the work of its members (both in the field and in museums) on the Geospizinae, will shortly be issued by the California Academy of Sciences. Here again is credit due Dr. Orr for the "drudgery" connected with the proper preparation of this manuscript for publication and the carrying on of an extended long range correspondence with Mr. Lack entailed by such preparation.

The Societies which sponsored the expedition, those participating in it and its chief beneficiary, Science, are under substantial obligation to Dr. Orr for the tremendous amount of work he has performed, and too much credit cannot be accorded him for the extraordinarily fine results attained in the breeding operations which he alone carried on with the living specimens brought back by Mr. Lack.

With no previous experience in the caring for, or working with, live birds and with the scientific ornithologist's usual antipathy and distrustfulness of behaviour observations made on captive specimens, he undertook and carried through to a remarkably successful conclusion (with the sympathetic co-operation of Director Miller and Curator Moffitt) a task which called for all the skill, knowledge, and versatility of an experienced aviculturalist.

Because of the scepticism so consistently exhibited by professional ornithologists as to the value of working with live birds, it is not alone pertinent but of considerable significance to conclude this paper with a quotation from Dr. Orr's manuscript on his work with these Darwin Finches :—

“ I may say that while many of us have been considerably less interested in the behaviour of birds in captivity than in the wilds, nevertheless, there is much information that can be derived from such studies. Undoubtedly the out-of-door laboratory is the ideal one for a study of normal avian behaviour. It is surprising, however, how little difference there is in the reactions and responses of these Geospizids in captivity to those in the native state where corresponding types of observations have been made. Furthermore, one is able to experiment with captive individuals in a manner which is impossible in the wild, but which likewise may throw more light on the fundamental factors producing the normal behaviour pattern than would ever result from repeated observation on the normal behaviour in the wild state.”

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BIRD WATCHING IN SOUTH AFRICA

By NOËL PHIPPS, F.Z.S.

Most of my time since I arrived in South Africa in September, 1940, has been spent in Johannesburg, but even here I have seen quite a number of birds to interest me. The Cape Sparrow or "Mossie", *Passer melanurus*, the cock a very handsome fellow with black head, white crescent from eye to throat and reddish brown back, is ubiquitous and a persistent nester like his English cousin; they build mainly in the oak trees which line most of the streets in the suburbs—a large untidy nest of leaves and sticks. The Cape Wagtail, *Motacilla capensis*, looks like an immature Pied Wagtail, with grey replacing nearly all the black parts of the latter's plumage; it is a familiar sight in suburban gardens, as is also the Laughing Dove, *Stygmatopeia senegalensis æquatorialis*, which has pinkish brown head and breast and slate grey wings.

In this garden there is a mulberry tree and the huge juicy mulberries attract the "Toppies", Layard's Bulbul, the common Bulbul, seen wherever there are fruit trees and gardens; they sing a good deal and have some lovely "liquid" notes. The Cape Robin, *Cossypha caffra*, is larger than the English Robin, but with the same mannerisms and inquisitiveness; has a white band over the eye, rufous breast, grey below and rufous back and tail. It has a lovely song. Another bird quite often seen even in gardens on a big main road with noisy trams and a ceaseless stream of passing cars, is the curious Mousebird or Coly; a resident of South Africa described them to me as "Parrots", which of course is quite incorrect, though they are not at all unlike Cockatiels in general appearance but without the bright colouring. They have a very "mousey" way of moving about a tree and they cling to a branch with their "elbows" below their feet—a very curious habit. There are three kinds, all very similar, the Cape, Speckled, and Red-faced. They go about in parties of five or six and advertise their presence by their clear whistled call. Their only foods are fruit and berries and on account of the former predilection they are much disliked by gardeners. In Natal I was walking quietly along a narrow side road and looking up saw five in a little bush bare of leaves, not four yards from me—they had spied me first and had a comical air of trying not to appear nervous; after a while four of

them flew off a little way, but the fifth stayed stubbornly to stare me out of countenance so I countered by taking three snaps of him, which unfortunately when printed did nothing more than show that he was in the bush.

Early last June (midwinter here) I watched Malachite Sunbirds catching flies, and on one occasion a large moth, on the wing from the tops of oak trees in the gardens of St. John's College, Johannesburg.

At Swartkopskloof on a hillside above Pietermaritzburg, Natal, where the climate is warmer and more moist than in Johannesburg and where flowering shrubs and particularly azaleas flourish exceedingly, two other Sunbirds are very plentiful at certain seasons. In October, November, and December, the Black or Amethyst Sunbird, *Chalcomitra amethystina*, a noisy braggart fellow who looks quite black until the sunlight reflects on the metallic patches of green on the head and purple on the throat, is very much in evidence on the glorious crimson hibiscus blooms and in the blue-flowered Jacaranda trees. These and the Lesser Double-collared Sunbird, *Cinnyris chalybeus*, with brilliant green head and neck and scarlet breast, a jewel-like little bird of a quieter disposition, are both very fond of the flowering eucalyptus or gum trees.

The rogue, and I am afraid the scourge, of these lovely gardens is the handsome black and white Fiscal Shrike, *Lanius collaris*, commonly known as Jacky Hangman or just Jacky. He is a real tyrant, "sees off" anybody smaller than himself, drives the other fellow away from the bird bath, and is in short a regular bully. One of the commonest sights when motoring or travelling by train is that of Master Jacky perched in his characteristically proprietary attitude on a telegraph wire. Another lovely Shrike but of a very different disposition is the Bokmakiere, *Telephorus zeylonus*, back olive green, throat yellow with a deep black band, and yellow under-parts, and black and yellow tail. I watched a pair of these in Natal in December feeding a practically fully grown young one. They are very Thrush-like in their habit of landing on the lawn, taking a quick run and pulling up short to look around; and the young one was also like a young Thrush in his way of standing about rather foolishly waiting for food, and having no tail feathers. These Shrikes have various lovely whistling calls.

Soon after dawn every morning and just before sunset one is sure to hear the loud, discordant and foolish-sounding cries of four or five Hadadas or Green Ibis, *Hagedashia hagedash* (the name Hadada is taken from their call note). They are large heavy winged birds with no tails and long curved beaks, which roost and nest in tall trees, and are always very noisy over their affairs, rather like Rooks.

I have paid several visits to Blue Lagoon beyond Port Shepstone, one of the tiny seaside places on the Natal South Coast, and it is a real birdwatcher's paradise. Here the Brown-hooded Kingfisher, *Halcyon albiventris*; red beak and brilliant blue on wings, rump and tail, is almost a common bird, and like the Jacky loves to sit on a telegraph wire from which he swoops down on a grasshopper or other insect in the grass below. This Kingfisher subsists practically entirely on insects instead of fish. They have no fear of man and a pair in the garden were very tame and made a lovely colour picture perching on sprays of bougainvillea, then flying leisurely a little further on if approached too closely; if really disturbed they fly off with a loud cackling call. Another Kingfisher very often seen in twos and threes along the banks of the lagoon and on the sea shore is the Pied, *Ceryle rudis*, black and white as the name implies; they utter quite loud chattering calls while flying. These are fish eaters. I watched a Half-collared Kingfisher, *Alcedo semitorquata*, smaller than either of the preceding ones, with a wonderful blue on head and back and a black bill, on a branch overhanging the lagoon; and one day when I was paddling down the bed of a little stream in a thickly wooded valley, one of these brilliant aquamarine blue jewels flew so fast and so close past me, first up and then down the stream, that the flash of blue was all that I could see. Another Kingfisher quite often seen and also a fish-eater, but nearly always solitary, is the Giant Kingfisher, *Megaceryle maxima*, a much larger bird; length according to Dr. Roberts seventeen to eighteen inches, slaty black with white throat and under-parts and chestnut breast. Fond of perching on a rock just as the tide recedes from it. I walked slowly and in full view up to within twelve yards of one once before it flew away. I saw another sitting unperturbed on a telegraph wire on the main South Coast road as we drove past.

The scenery all along the South Coast from Durban is charming,

countless little bays, most of them with lovely sandy beaches, and inland small hills and grassy valleys dotted with thick clumps of bushes ; (this is the coastal belt in Natal and the climate is practically tropical), the wild banana and various small palms are abundant and arums, red-hot pokers, and blue agapanthus grow wild. In any of the clumps of bushes or along the numerous streams one may see lovely, and to English eyes, rare birds. I had great pleasure in having a splendid view of a party of Black-collared Barbets, *Lybius torquatus*, as I had kept a pair at home. They have a heavy black beak, red face and neck, black collar and nape, light yellow under-parts, dark wings and tail. Mine were sold to me as rare unknown Barbets but they are plentiful out here, though like most Barbets more often heard than seen. They sing loud duets, answering one another so quickly that it sounds like one bird calling. I also had two clear views of the lovely Red-fronted Tinker Bird or Barbet, *Pogoniulus pusillus*, a most charming little bird ; quietly popping about in a bush, and with his green black and red colouring prettier than any picture.

On the beach the tiny White-fronted Sandplover, *Charadrius marginatus*, rather a bad-tempered looking bird, runs very fast feeding on the edge of the lagoons. Other Plovers seen inland (though not in the coastal belt) in great numbers are the Crowned Plover, *Stephanibyx marginatus*, and the Blacksmith, *Hoplopterus armatus*, a stolidly handsome black and white bird.

Two interesting game birds (though now protected) seen frequently while driving through the Transvaal and Orange Free State when the veld was bare and parched with prolonged drought, were the Blue Korhaan (pronounced Korān), *Eupodotis caerulescens*, and the White-quilled, *Afrotis afroides* ; these small Bustards have big heads on long necks and stand high on their legs, giving them a rather unfinished appearance ; the White-quilled has a particularly harsh cracking call.

Several species of Starlings are very plentiful, particularly the Red-winged, *Onychoganthus morio*, a dark coloured bird of a Black-bird-like appearance, with the primary feathers of the wings rust red. Pairs of these were nesting in holes high up in the rocky walls of the Uvongo Gorge which opens into a deep lagoon. The Black-bellied Glossy Starling, *Lamprocolius coruscus* is more Spree-like in shape.

The bird I have been most pleased to see is the African Jacana or Lilytrotter, *Actophilornis africanus*, plumage bright chestnut, throat white, black head and nape with a bare blue patch above the bill—its toes are extremely long to enable it to walk on the weeds on the surface of the water. I watched a pair and four young ones on a pool and then running about on a sandbank on the edge of the river at Scottburgh on the Natal South Coast. I had first seen them from the train when I was on my way to stay at a place further along the coast, and at the first opportunity I went back to see if I could find them and was terribly pleased to see them on a pool ; I climbed down the railway embankment and got quite close before they flew off, and with the glasses I still had an excellent view of them.

I have been able to identify unfamiliar birds from two excellent South African bird books—*A First Guide to South African Birds*, by Dr. Leonard Gill, and *The Birds of South Africa*, by Dr. Austin Roberts, a much larger book. The scientific names are taken from Dr. Gill's book. I may add that I have only mentioned birds which I have been able to identify for certain.

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THE RED-TAILED BABBLING-THRUSH

(*Garrulax milni indochinensis*)

By SYDNEY PORTER

This is one of the most beautiful importations of the years just previous to the war. The few pairs in this country were, I believe, brought from Indo-China by Monsieur Delacour who discovered this sub-species there in 1927. To my mind it is certainly the most beautiful of the Babblers or the *Timaliidae* which comprises a large family of birds of varying aspect and size, from that of a Wren to a Jay. This family forms a useful repository to the scientific ornithologist who places in it any bird whose affinities he is not sure of. The headquarters of the family is in the tropical regions of South-East Asia, mainly the Malayan countries. Monsieur Delacour records over 123 members of this family from Indo-China alone !

The genus *Garrulax* to which the Red-tailed Babbling-Thrush

belongs, is formed of the most typical babblers and are variously known as Jay-Thrushes, Laughing-Thrushes, and Babbling-Thrushes. They are restless and noisy birds, going about in small bands and frequenting forested regions usually on mountains and often at great heights. Most of these birds are sombrely coloured, their plumage being various shades of brown, white, grey, and black. But three species are of great beauty and are found on the high mountains of the South China region. These are the Red-winged Babbling-Thrush (*Garrulax phaniceus*), the Elegant Babbling-Thrush (*G. formosus*), and the subject of these notes.

The size of an ordinary Thrush, the Red-tailed Babbler has exactly the shape and demeanour of that well-known bird the Pekin Robin. In colour the head and nape are rich chestnut, the ear-coverts greyish-white, the rest of the body is a deep shade of greyish olive brown, each feather having a darker edge giving the bird a scaled appearance, the wings and tail are a translucent glossy crimson of unusual brilliance. When they first came to me the birds' wings and tail had none of the brilliance which they later assumed after living two summers in a large outdoor aviary and feeding mainly on live food such as fresh ant eggs, gentles, meal-worms, and cockroaches. They also eat a large amount of fruit and berries, especially apple.

Like the rest of the Babblers the birds are excessively active, moving about with the bounding leaps so characteristic of the family. Owing to this they are very unsuitable for cage life and require a fair-sized aviary. They look extremely beautiful when hunting about clumps of bamboo or rooting about in the dead leaves at the base of these plants.

Though the birds come from regions where it must certainly be very cold in the winter (from near the summits of high mountains) I have not risked leaving them out of doors altogether; they are fastened in a heated shelter every night during the cold weather.

In moments between their restless activity the birds sit pressed close together preening each other's feathers, when for no apparent reason one will suddenly jump over the other's back and snuggle down on the other side.

They are extremely wasteful in their feeding, scattering the food all over the place a few minutes after it has been put in the aviary :

nothing seems to remedy this for if the food is put in too deep a pot they refuse to eat it.

A great deal of their time is spent hopping about the ground turning over dead leaves and rooting about looking for insects in typical Babbler fashion. Last year the birds toyed with bits of nesting material but no attempt was made at building. This year, now that the birds are in better condition and in a larger aviary : I hope they will do something, but I may not be as lucky with live food as I was last year.

Not a great deal is written about the wild life of this Babbler. The following is quoted from Monsieur Delacour's book on the birds of French Indo-China : " Like the rest of its kind it is found at high altitudes always above about 3,000 feet. Its voice is very varied and often agreeable. We found this species in the mountains of Tamdao in the centre of Tonkin, starting at about 3,000 feet."

A rather fuller account is found in Caldwell's *South China Birds*, from which the following is an extract. " Recorded only at high altitudes in mountains of Western Fukien. Restricted to the brushy and wooded mountains of 5,000 or more feet. Our collectors reported it rare below 6,000 feet in the high ranges of the mountains along the province border. We have never located it at Cha-bang or the high altitude region back of Yenping which is a rendezvous for birds in the province. This beautiful Thrush is seemingly restricted to a very limited area . . . the nest being composed of sticks, weed stems, and leaves, and placed in a bush. Eggs, three to four pale blue, some specimens inclined to have faint dusky hair lines. Season, April and May."

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MISCELLANEOUS NOTES

By EDRED J. L. MARSHALL

After sending in my notes on Meyer's Sickle-bill Bird of Paradise which appeared in the January-February, 1942, issue of the AVICULTURAL MAGAZINE, I was most interested to read Mr. Lee S. Crandall's account of the attempt made to breed by a pair of this species kept at the Bronx Zoo, New York ; since then, due to the great kindness of Mr. Crandall, I have been pleased to read his notes of various forms of display made by these birds, which are so well described in *Zoologica* (vol. xi, No. 7, 1932), also to receive a plate and a description of the egg which was laid in 1941. Also owing to the kindness of another member who advised me, I have obtained the fine volume of the AVICULTURAL MAGAZINE for 1937, which contains several references to this species and a fine coloured plate of a pair in the London Zoological Gardens. It is therefore to be greatly regretted that, after having stimulated all this interest in these remarkable birds, I have to report the demise of my own, due to over fatness, brought about I presume by the unnatural wartime diet which I have been forced to give all my birds.

Strangely enough, other birds I have seem to do remarkably well on makeshift diets, although I lost a very fine Hardwicke's Fruitsucker and a Sacred Kingfisher. I think that the loss of these, however, led me to experiment more widely in foods for the remainder with the result that the ones which I have now are keeping very fit. A Senegal Turacou I have, which I believe is an entirely frugivorous and leaf-eating kind, has lived for months without fresh fruit, but has had a small quantity of dried fruits, in some cases soaked for some time before feeding, also bread and milk, meal, with insectivorous food and boiled potato, carrot, and rice. I do not think that the insectivorous food is touched except that small particles of crissel may be picked out, also the meal is left well alone ; but as he shares an aviary with a Mot-mot, one takes what the other leaves, I suspect that the Turacou takes more than his share of the Mot-mot's very meagre helping of raw beef on such rare occasions as he gets any. The latter gets garden worms and mealworms at rare intervals which help matters as the Turacou will not touch these.

Others I have are an Amethyst Sunbird and a Yellow-winged Sugar-bird, both males, which are really less trouble to keep than any birds I have had over a period of over twenty years of foreigners. They keep absolutely fit on a nectar diet, changed at times with diluted Virol, together with as many small insects as possible ; spiders, small flies, sprays of roses or honeysuckle covered in aphids, or small fly being especially appreciated. With reference to the Sunbird, I was very surprised recently to see this bird running along the floor of its cage, seemingly as fast as a Wagtail runs, which method of progression is entirely foreign to such species. My observations have shown that the ground is shunned if possible, but on such rare occasions as they do go down the usual procedure is to hop, and very clumsily at that.

My oldest inhabitant, a Persian White-eared Bulbul, which I have had for some ten years now, keeps in good form and sings from dawn till dusk. He displays very frequently. I have often wondered if other members of the Bulbul family do so ? The whole of the body feathers are fluffed out into a round ball, from which the wings are fully extended, the head and tail are held very low, the latter spread fanwise, and the body is swayed slowly from side to side, all the while a low song is warbled. This will sometimes last for some three or four minutes.

In conclusion I would like to say how much I enjoyed reading about the collection of rare Colombian birds brought to the Bronx Zoo, recently described in the AVICULTURAL MAGAZINE. Hasten the days when such may be possible in this country.

* * *

NOTES

THE WHITE CROSSOPTILON

Ronald Kaulback's excellent book, *Salween*, contains several notes on the White Crossoptilon (*Crossoptilon crossoptilon*), of which he saw a number during his journey of exploration in Tibet in 1935-36.

"On the way up we disturbed a nye of fifteen large Pheasants (pure white apart from pink rings round the eyes, and a grey patch on the top of the head) which went gliding down the slope without any hurry from ten yards off" (p. 153).

"On the way we saw a covey of a dozen Partridges, and more than forty of the white Pheasants pecking about in the stubble within ten yards of us, merely glancing up as we rode by, and making no effort to move.

"It was always noticeable how very much tamer birds and animals were in the immediate neighbourhood of a monastery than elsewhere, for not even the most hardened poacher would dream of taking life in such a place. These Pheasants were the commonest of the larger birds in the Salween Valley, moving about on the sides as many as sixty or seventy together and shouting loudly to each other in the early morning from hill to hill. There were two distinct varieties, the one almost pure white, like those we had seen above Zimda, the second a pale grey with black tips to the wings and tail; and between them were half-breeds of every shade" (pp. 163-4).

"Then, just across the pass, we put up a covey of four rare and very large Partridges, which had been resting in the snow; and further down we saw thirty more of the big Pheasants, mostly of the blue variety but with some half-breeds" (p. 182).

JOHN YEALLAND.

* * *

CORRESPONDENCE

THE WATERFOWL NUMBER

May I be allowed to congratulate you on the fine Waterfowl number of the AVICULTURAL MAGAZINE just received over here. I have enjoyed reading it so much and look forward to many more from the same source.

One of the articles that interested me particularly was that of Mr. Stevens on rearing young Sea Duck. Having laboured over this tribe for several seasons I found his discussion most helpful. My principal ambition at this point is to get somehow, sometime, to Hooper Bay, Alaska, the only point on our continent where Spectacled and Stiller's Eider breed. Think of the possibilities!

You will be interested to know that at the moment I have a fine adult pair of our Common Eider (*dresseri*) on my pond. They were picked up with a few others and a pair of American Scoter last winter after a bad siege of oil along our Cape Cod coast. Now they are completely free of oil and apparently perfectly happy in their new surroundings.

I also enjoyed Dr. Berry's article on his hybrid Geese. It is certainly important, as he points out, to emphasize that their resemblance to Canadas is purely fortuitous, for hybridization among animals tends to result, not in the fixing of characters but rather in an endless chance distribution of characters so that no two of the resulting progeny ever exactly resemble each other. At present I have an interesting pair of hybrid Mallard \times Pintails on my pond. They are brother and sister, are mated, and are the F 3 generation of the original cross. The female has inherited the female Pintail character of dimorphism in size and is much smaller than her brother although bigger than a normal Pintail. At the moment she is brooding a potential F 4 of six eggs.

One other point anent Mr. Moody's article on Snow Geese. I am sure he and others will be interested in knowing that the breeding ground of Ross' Goose, as well as that of the Greater White-fronted or Gambel's Goose has been found. Both species nest on the Perry River, which opens into Queen Maud Sound near long. 102° W. on the northern coast of North America. An account of the finding of the Ross' Goose nests is given by Mr. Taverner in the *Canadian Field Naturalist*, vol. liv, No. 9, for December, 1940.

With best wishes for continued success of the Magazine.

DILLON RIPLEY.

KILRAVOCK,
LITCHFIELD, CONNECTICUT.

INTELLIGENCE OF A HAND-REARED CANARY

Being very interested in Mr. Carr's article on disadvantages and advantages of hand-rearing birds, I thought it might interest Aviculturists to know of a Canary I hand-reared last year. I took three young birds out of the nest as there were five, and I brought them up. Two I gave to friends, one I kept. This bird is one of the most intelligent birds I have ever known. We have in the house a lady (Mrs. Lawson by name, she was bombed out of her house in London) who is bedridden and quite unable to move, except her hands slightly. I thought she might be amused to have this Canary, and gave it to her. She has it in her bedroom in a cage, and lets it fly about the room every day for some hours. As soon as it is let out, it immediately flies on to her hand, or shoulder, and remains there for some time, quite fearless. It flies round the room, and then goes into the maid's work basket, there it collects all sorts of things, such as cards with wool or silk on them (used for mending) and flies across the room carrying them in its beak, and deposits them in Mrs. Lawson's hand; it does this time after time, until it gets quite a collection. The other day I said to Mrs. Lawson I'll give Jeannie (its name, but it should be Jim, as it is a cock and sings beautifully) something to bring you now, and I put a Crane's feather, certainly twice as long as Jeannie, in the basket. Next day I was sitting in the room and the little bird struggled to get the feather out of the basket, succeeding, and carried it straight to the bed, and put it in Mrs. Lawson's hand. It is very curious, it never takes any of these treasures to anyone else but its mistress. The bird really doesn't care for anyone else, and it is devoted to Mrs. Lawson. When she wants it to go back to its cage she has the cage put on the bed, and tells it to go in, and it immediately does. But if anyone else tries to put it in. No thank you. It will not go. I must say I am very pleased to have given Mrs. Lawson so much pleasure in the little creature, as it is an endless amusement to her. It always helps her with her meals, when they are taken up. The curious thing is, that I, who brought it up, should now never be taken any notice of, and all its affections bestowed on the invalid.

L. REGINALD WAUD.

BRADLEY COURT,
CHIEVELEY,
NEWBURY.

* * *

RED-WINGED JAY-THRUSHES

My Red-winged Jay-Thrushes, deposited in the London Zoo since the beginning of the war, have been carrying about nesting materials, but so far have not begun to incubate. I should be very interested to hear if any other fellow Aviculturist has bred this most interesting Jay-Thrush from Indo-China in captivity.

P. H. MAXWELL.

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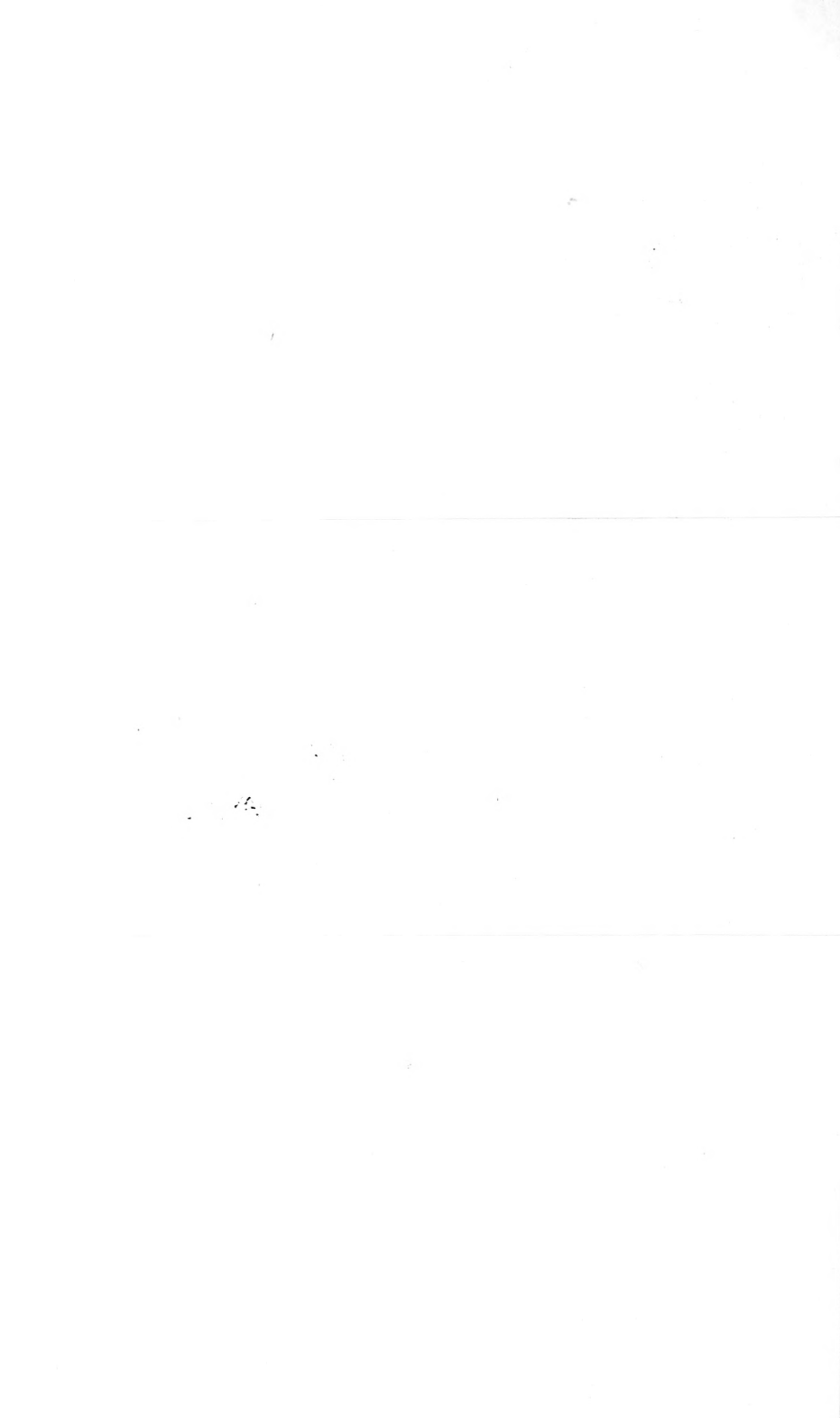
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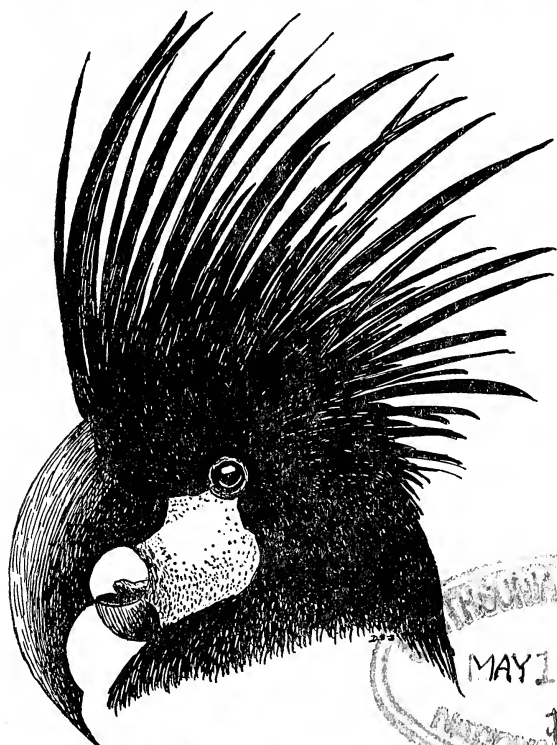
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NOV.—DEC., 1942

BREEDING AND REARING BLUE-FRONTED AMAZON PARROTS

(*Amazona aestiva*)

By G. D. SMITH

It is now twenty years since I brought home my two Blue-Fronted Amazon Parrots from Bahia Blanca, they had always been in one cage, and it was quite a number of years later before the hen started laying eggs, and not till then did we realize they were a pair.

In 1939 I decided to set the hen on four eggs, she hatched two chicks then, but after seven days the two chicks were destroyed by one or both birds. I inquired the reason for this, and was told to try separating the birds when the chicks were hatched.

The next year one chick was hatched, and I separated the birds ; however, after fourteen days the chick died.

In 1941 I tried a new arrangement, using two cages, one for the nest. I filled the cage bottom with sawdust instead of sand, and set the hen on four eggs. The time of laying the eggs occurs at beginning of June ; I set her on 18th June, and one chick was hatched on 17th July ; this seems to be the period of incubation. During the time of hatching the cock bird feeds the hen and, as far as I have observed, she only comes off the eggs about once a day. I left the other eggs in for a few days, and not being fertile I took them out.

Both birds fed the young chick very attentively. The feeding method seems very strange ; the parents take the youngster's little head right inside the bill ; one would think they were going

to eat the little chick, but it is all very interesting. The hen sat with her chick for four weeks ; during the first week the chick's eyes were shut, it was on 25th July I noticed its eyes opening. After the fourth week I went in one morning to find the chick abandoned, and I could just see a twitch of its bill. I took it out, and put it in front of the fire, gave it warm milk with a few drops of whisky in it ; it recovered pretty well, and I hand-fed it that day. The next morning I decided to try it back to its parents, which I did, and they both went to it and fed it, and the hen sat with it. As I thought all was to be well I left it.

However, unfortunately, the hen came off it during the night, and I found it in the same state of weakness as the previous day. I then resolved to do my best at hand feeding. I got a teapot nest, lined it with flannel, and kept a hot water bottle under the nest to keep it warm, and covered the chick with flannel. I used a glass tube and a wooden plunger for the purpose of feeding it. I rolled biscuits and mixed grated nuts, carrots, and chopped lettuce which it seemed to enjoy, also heated milk and whisky, and to my great encouragement it kept revived.

The fledging of the chick was a very slow progress, and it was the end of September before it could fly. As it got older I fed it with Spratts egg and biscuit food.

I can assure you it has been a great nature study watching and feeding the young bird ; it was a hard task, but has been worth all the care put on it.

The bird is now fourteen months old, and is a fine talker, and when I am at home he is mostly out of his cage and on my shoulder. We called him " Mickey " and he certainly knows his name. I must say we get great amusement with him.

This year (1942) I had another chick hatched, but it died after eighteen days. I might have been able to save it had I been at home during the day, as the previous night it seemed quite bright and squawking fairly loud ; however, better luck next year.

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CARRYING ON

By EDWARD BOOSEY

To begin with I wish to say at once that I should have hesitated to try and scrape together any wartime bird news but for the request of our highly efficient and most successful Editor.

Certainly, if anyone had asked me in September, 1939, if I thought the Keston Foreign Bird Farm would still be in existence in 1942 I should have replied very emphatically "No!" Yet, so far, we have somehow managed to carry on and, moreover, many of the birds are still breeding, though heaven knows how they rear any young ones on their wartime diet.

Also it is quite impossible to give them the attention they had before the war, as every available spare shelter plus seed huts, carpentering sheds, etc., have been converted to duck and poultry keeping; so that the foreign birds have to be attended to in whatever spare time may be left over after one has finished coping with 100 ducks—Runners and Campbells—and 600 chickens of all ages. I find the ducks quaint, attractive, and most intelligent, but the chickens . . . ! Foolish, they certainly are and what is more they seem to become progressively sillier and sillier from the time they leave babyhood behind until they finally achieve full adult lunacy!

Altogether they are a grim example of the horrible results, in the way of depraved stupidity—which can follow too long and intimate an association with *Homo Sapiens*.

However one must not be too hard on them as they certainly do manage to produce eggs in spite of wartime feeding, which consists mainly of boiled potatoes, scraps, and a noisome brew known as "Town Waste"—the whole dried off with standard dry mash, which resembles nothing so much as the sweepings from a very dirty carpet.

At the beginning of the war when food difficulties were already looming ahead we decided to part with many of our rarest Parakeets, among them Princess of Wales and Hooded which, incomparably lovely as they are, were—according to past experience—unlikely to produce much in the way of young ones to compensate for the precious food they would consume. I was heartbroken to part with them and still miss the wild, excited, and rather foolish

cries of Princess of Wales, and the pert, aggressive "Chissuk . . . chillick" of Hooded.

Gradually, for one reason or another, we have parted with Crimson Wings, Rock Peplars, Common Kings, Grey Parrots, Leadbeater's Cockatoos, Black Cockatoos, Red-faced Lovebirds, and Red-headed Parrot Finches. Actually the nucleus of all the best breeders we have retained are in the nature of a sort of Noah's Ark collection from which it would be possible for the farm once more to be gradually built up if ever the waters subside and the Dove appears with the Olive branch.

Of course food stocks are starting to run low, so whether the Keston Foreign Bird Farm will end before the war or vice versa is entirely in the lap of the Gods—of War.

The war has forced one to try some curious feeding experiments in some of which readers may perhaps be interested.

Fortunately, when war broke out we had a good stock of all seeds some of each kind of which we still possess, though we naturally have to hoard them as a miser hoards his gold. Last year we grew a fair amount of sunflower, though the wild birds—chiefly Tits and Greenfinches—accounted for a good deal before it ripened, and the remainder, when harvested, did not compare in quality with the full heavy seeds one used to buy. Altogether I don't consider trying to grow formerly imported birds' seeds outdoors in this country on any large scale is a very worth-while venture as they are only likely to ripen in summer of quite exceptional heat, and these seem nowadays to be becoming more and more few and far between.

Some time ago we managed to get hold of a quantity of "blitzed" monkey nuts, and although I confess I rather turned my nose up at them at the time, they have certainly proved to be our chief standby.

I decided we could afford to go on giving seed to the Grass Parrakeets—Splendids, Elegants, Bourke's, and Blue-wings, but everything else had to be got on to blitzed monkey nuts, some of which incidentally were survivors from the fire of London (toasted pea nuts, in fact!) while others had clearly had a pretty good soaking in sea water.

At first I could not get such birds as Stanley's Redrumps, etc., to treat them as food at all, but at last by dint of withholding

all other food they gradually started to eat them and now seem to relish them. To begin with I gave them nuts and seed alternate days, gradually increasing the intervals between the seed ration until now they have four days of monkey nuts alternating with one of seed and so on. Curiously enough this monotonous and, I should have thought, very "unbalanced" diet seems to suit most of the birds well enough with the sole exception of a Green-winged King who certainly seems to miss a more varied menu, particularly, no doubt, fruit of which he was formerly a large consumer.

All the birds are able, of course, to have unlimited quantities of spinach beet, and since many of them are successfully rearing their young ones, I can only suppose this in some measure takes the place of fruit. The monkey nuts are by no means finished with when the Parrots and Parrakeets have had their fill. The residue is removed every few days or so and then put through various sieves. The largest portions are fed again to the Parrakeets, the smaller ones to the Lovebirds and Budgerigars, and the fine powder is mixed half-and-half with insectivorous food for the benefit of a White-capped Redstart, the remainder of it being mixed into the mash for the chicks and ducklings.

Incidentally this insectivorous mixture seems to suit my five-year-old Redstart very well, and he has completely regained his former vivacity and slimness of figure, partly, no doubt, because he is forced to catch his own live food in the large planted aviary in which he lives, and can no longer rely on mealworms, which I can only afford to give him very sparingly in the hardest of winter weather. In the same aviary are a pair of Rose-breasted Grosbeaks and a cock Giant Whydah—just now very magnificent with his long flowing tail. The two veterans of which I have written before—Niltava and Many-coloured Parrakeet—succumbed, as I had feared they would, in the winter of 1940.

Another Parrakeet food experiment was with mangold wurzels. The day when I was cutting up some of these for the chickens it suddenly struck me that being reddish coloured outside and white within, the birds might mistake them for slices of ripe apple. In this I was correct, for they all rushed eagerly, poor things, to what they doubtless imagined was their first taste of a real apple for years, only, in most cases, to turn away in disgust when they found

that the appearance belied the taste. However, I persevered, and finally all the Parrakeets—and the Grosbeaks—came to relish them, and it seemed to me that the limit of war-time incongruity had been reached as I watched that exquisite gem, the Splendid Grass Parrakeet, thoroughly enjoying about the coarsest of peace-time cattle foods ! I have little doubt, though, that they were good for them, and they were certainly invaluable during the last winter when green food was practically unobtainable. Amazons, Ringnecks, Kings, and many of the Broadtails grew particularly fond of them, and I am only sorry that this being the off-season I have none to give them now, though there is a nice crop coming along in the garden.

So far this season a fine brood of four Mealy Rosellas and two good broods of Stanleys and Bourkes are fledged, also Bengalese, Common and Silver Zebra Finches, and the following have young in the nest : Common Rosellas, more Stanleys, Common and Yellow Redrumps, Budgerigars, Cockatiels, Splendid Grass Parrakeets, Elegants, Roseate Cockatoos, Blue-fronted Amazon Parrots, and Lutino Ringnecks.

We retain two or three pairs of most of the various Lovebirds, including one of Blue Masked. Lovebirds have always been rather late in going to nest with us, and this year—doubtless owing partly to the very unstimulating nature of their food—they are being slower than ever. Of our three pairs of Many-colours, one pair had a clutch of eggs, all unfertile. Another pair had eight eggs which were all on the point of hatching when the hen unaccountably deserted them and unfortunately I had only an unmated hen Redrump to put any of them under. Incidentally she has hatched the four eggs I gave her, and seems to be going to rear the young ones successfully. It is wonderful how hard a really efficient breeding hen Parrakeet will often work to rear her brood single handed. The hen Many-colour looks like laying again. The third pair are young birds bred last year, and have not yet gone to nest. A pair of young last year's Mealies hatched, but failed to rear their brood. The parents of the young Lutino Ringneck are of special interest, as they are both themselves Lutinos. The cock was bred some years ago by the Duke of Bedford, while the hen was bred here two years ago. When the cock became fully adult I was rather surprised to find that he developed the characteristic pink

neck ring. Incidentally, this pair eat boiled potato, whereas a pair of Lutino breeds—model parents on pre-war feeding, refused potato and let all their four young ones die. Nor can I persuade Broadtails to eat it, though in their case they can apparently rear their young ones without it.

I recently made a tour of inspection of all nest boxes, and found that though the quantities of young ones is in most cases below average, their quality remains—all things considered—remarkably good. I did not, however, disturb the old pair of Amazons, but they are eating more than usual, and I have heard the young in the nest. A two-year-old pair are playing about, but I don't think have any very serious nesting intentions.

I was most interested to read Miss Knobel's account in the *AVICULTURAL MAGAZINE* of her young Amazon "Richard", which was bred here last year, and to hear from her since how marvellously tame he has become and that he continues to add to his already extensive vocabulary. The parent Amazons have now altogether fully reared ten young ones at Keston, exclusive of whatever number they may have in the nest at present.

It may be of interest to record that a Splendid Grass Parrakeet was hatched and reared by Peach-faced Lovebirds last season. The poor thing had a very chequered career, as the Lovebirds' nest box being of course quite unsuitable, it kept on falling out, and in the end, grew up on the floor of the run. Finally its foster parents suddenly turned on it, but it was rescued in time, and has become a very nice little hen, and is sitting on a clutch of eggs as I write.

The hen King, who has always previous years played billiards with her eggs on the floor of the shelter, has with true bird-like perversity chosen this, of all seasons, to lay properly in a nest box for the first time. She is mated to a cock Green-winged King.

That, I think, is all the birds we have left except a few Pheasants, Golden and Amherst, and Ducks, Mandarin, Carolina, White-eyed Pochard, and Versicolor Teal, which still inhabit the pond enclosure. Of these, my favourite has always been the enchanting and friendly little Teal.

Before concluding this Keston bulletin, I think it may be worth recording one or two recent experiences with that most attractive of villains—the Common Magpie. Actually he is not too common

in this part of Kent, but a pair have taken up residence at Brambletye. In due course the parents were joined by a newly-fledged family of four. As I stood watching these short-tailed youngsters with their parents hopping excitedly about on the flagstones surrounding a lily pool, I thought what a charming picture they made, until it suddenly dawned on me that they had not flown down merely for a drink, as I had supposed, but were systematically picking out and eating all the water snails—in this case that invaluable scavenger *Phanorbis corneus*, with which, only a few days before, I had managed, after considerable difficulty to restock the pond! A few days later they turned their attention to some young chicks, so now I fear the time has come when we shall have to turn our attentions to them. Up to now I have done my best to try and persuade myself that they were not wholly deserving of their evil reputations, if only because they are so very beautiful—particularly in flight—and because, too, they remind me so forcibly every time they chatter and scold, of the magnificent pair of Occipital Blue Pies which used to breed so successfully at Keston just before the war.

* * *

MY CUBAN AMAZON

By JOHN YEALLAND

I had not seen a Cuban Amazon (*Amazona leucocephala*) since a good many years ago, and had begun to wonder if this bird, once quite common in the wild state, had become rare on account of human persecution, for otherwise it seems likely that so pretty an Amazon would have been imported more often in the years before the ban on the importation of Parrots.

Greene says: "These birds are also said by the same writer (Dr. Grundlach) to be very destructive in gardens and orchards, and particularly so in the case of the cocoa palm, of which they nibble the central shoot, and thus destroy the tree."

One fears that these charges may be true and that this, one of the most attractive of the smaller Amazons, may already have become quite rare.

In 1934 a lady brought me a hen of this species asking if I could find a home for it and thus I became the owner of what proved

to be a charming and affectionate bird. The bird had been brought from Jamaica by its former owner who had, I think, partly hand-reared it. Whether it had been taken from the nest in Jamaica I could not discover : the species was formerly supposed to be confined to the island of Cuba ; a rather similar bird, the White-fronted Amazon (*A. collaris*) being the Jamaican form.

After the curious manner of some Parrots my bird had an intense dislike of women and, indeed, was not at all friendly with men until she got to know them well : her former owner thought the aversion due to the fact that a cook had thrown water at her whenever she made a noise. Whatever the explanation, the Parrot clearly regarded all women as cooks of the worst, or water-throwing type, though she did not bear me the slightest ill-will for syringing her with warm water which I did on numerous occasions.

The bird was a good talker, saying a number of words and short sentences in a very good imitation of her former owner's voice. She was evidently satisfied with her repertoire when she came to me, for she did not learn another word afterwards, though, as is usual with talking Parrots, a great many of the miscellaneous noises she made were interpreted by people other than myself as perfectly good and intelligible English.

When I received her she was suffering from frequent attacks of a chronic form of catarrh which stubbornly resisted all the attempts I made to cure it, but which finally yielded after a long course of fresh air treatment, the attacks becoming less and less severe and frequent, with none at all during the last two years of the bird's life.

She had suffered from the catarrh for a long time before she came into my possession, and judging from the fact that she did not learn a single new expression during the eight years that I had her, she must have received a vast number of fatuous inquiries about the catarrh, for when so afflicted she would say in a voice charged with gloom, "Got a cold, Polly?"

Though the wings were perfect the bird was a poor flyer and the longest flight she ever made was one of about fifty yards, losing height all the time and ending in a somersault.

As part of the cure I used to put her in a tree on hot days : she did not much enjoy this, always hating to be left alone, but she did not attempt to fly away. I found the bird very quiet in

the ordinary way, but when left alone she would utter a piercing squawk, a sound she never made when in company.

She was extremely fond of raw carrot, fruit, and berries, particularly blackberries, but would not touch bark or buds of twigs or any green food.

Only this year she died from an affection of the liver—I think a form of hepatitis in which there was a serous discharge into the abdomen and an accumulation of a clear jelly-like discharge.

I have since seen the same thing in a Grey Parrot which, however, showed totally different symptoms and was plump, whereas the Amazon was very thin. No doubt the diet composed almost entirely of sunflower seed on which I was latterly obliged to feed her and the lack of fresh fruit in winter hastened the disease.

I think she would have bred and it was a pity that I could not get a mate for her, for it would have been interesting to try to breed this very nice Amazon.

* * *

ON A HYBRID LOVEBIRD

(*Agapornis personata* ♂ × *A. roseicollis* ♀)

W. C. OSMAN HILL, M.D., CH.B., F.Z.S., etc.

Although both the Peach-faced and Masked Lovebirds breed with great readiness in captivity, and the latter at any rate hybridizes freely with most other Lovebirds, I do not think these two have hitherto been crossed, and Mr. W. J. C. Frost, who saw my specimen a year ago or so, agreed with this opinion.

The specimen which furnishes the basis for the present account was hatched in 1938. Although eggs had been laid on several occasions before, no young had been hatched, and in the present case only the one was produced. Nothing unusual occurred in connection with nesting behaviour or incubation. Both parents assisted in the arrangements, and the usual nest-box full of bark chippings was collected; the female carrying them in the feathers of her rump. Other Masked Lovebirds lived in the same aviary at the time, and there were also pairs of Blue-crowned and Ceylonese Hanging Parrots in occupation.

I propose to give a full description of the hybrid bird, which is a male, followed by a tabulated summary of its principal characters compared with those of the two parental species.

On first leaving the nest the bird was fully feathered and in good plumage. It was green for the most part, except on the face, which was dusky, darker on the forehead and lores and fading through dove grey gradually into the green of the back of the head. In size it was as large as its mother.

It assumed adult plumage in about six months. This plumage is intermediate in most respects between that of the two parents, but verging towards that of the Peach-faced rather than the Masked.

The bill is yellowish at the base, but brick-red over the rest of its extent, on both upper and lower mandibles. The cere is dirty white. It is followed by a narrow zone of greyish feathers, then by a boarder frontlet of bright salmon-coloured, almost crimson feathers. The top and back of the head are green. Lores and cheeks are a soft mole-grey, becoming pink towards the ear coverts. The throat is bright pink, and this colour extends, becoming somewhat paler, as far as the breast, but here the feathers are yellow at the base and pink only at the tips, but as the tops alone are exposed when the feathers are *in situ*, the pink appears uniform. The abdomen and under tail coverts are bright grass green. The green of the mantle, back and major part of the wings is duller, more olive, as in the adult Peach-face, but it brightens again towards the upper tail coverts. The latter with uropygium is bright blue—cobalt feathers with ultramarine tips. The rectrices are of great systematic importance. The central pair are dull green with pale blue tips, the lateral ones have the usual subterminal black band, which is a generic character, but it is here broader and more complete than in *A. roseicollis*. Proximal to the black band is a narrow zone of very dull green, whilst the basal half of the feather is brick-red. The tips are pale blue, which colour is more extensive on the ventral surface.

The wing has only a faint suspicion of a yellow edge. The flight feathers have dull green outer webs and blackish inner webs. Their edges are tinged with bluish underneath as in *A. roseicollis*. This colour also affects the larger under primary coverts, as in *A. personata*. The smaller under wing coverts are bright green.

The feet are dull leaded grey, and have a tarsal length of 14.5 mm.

COMPARISON WITH PARENTAL SPECIES

| | <i>A. roseicollis</i> | Hybrid | <i>A. personata</i> |
|--------------------------------|---|--|------------------------------|
| 1. Bill, (a) height | 17.8 mm. | 19 mm. | 17 mm. |
| (b) colour | Horn colour with greenish tinge. | Yellow at base, brick red elsewhere. | Coral red |
| 2. Iris . . . | Brown | Brown | Brown |
| 3. Cere . . . | White | Dirty white | Dirty white |
| 4. Forehead . . . | Bright red | Brownish grey, followed by salmon. | Deep blackish brown. |
| 5. Pileum . . . | Green | Green | Same as forehead |
| 6. Lores and cheeks . | Rose-pink | Greyish with pink tinge behind. | Same as forehead |
| 7. Breast . . . | Rose-pink | Pale yellowish salmon. | Yellow or orange |
| 8. Upper tail coverts | Cobalt blue | Cobalt blue with ultramine tips darker than <i>roseicollis</i> . | Pale blue (uropygium green). |
| 9. Central rectrices . | Blue | Green with pale blue tips. | Green |
| 10. Lateral rectrices : | | | |
| base . . . | Bright red | Brick red | Orange |
| middle . . . | Green | Green (narrow) | Green |
| subterminal band . | Black, incomplete | Black, broad and incomplete. | Black |
| tip . . . | Pale blue | Pale blue | Yellowish |
| 11. Wing : length . | 106.7 mm. | 99.5 mm. | 94 mm. |
| (a) edge . . . | No yellow | Faint suggestion of yellow. | Yellow |
| (b) lesser under coverts . . . | Green | Green | Green |
| (c) greater under coverts | Bluish | Bluish | Grey-blue |
| (d) primaries | Inner webs tinged with bluish underneath. | Inner webs black slightly tinged with bluish underneath. | Inner webs black |
| 12. Foot : (a) colour | Dusky grey | Dusky grey | Greenish lead |
| (b) tarsal length . | 12.7 mm. | 14.5 mm. | 14 mm. |

It is manifest from the above table, that, although the hybrid partakes of some of the characters of both its parents, it exhibits in general a closer approach, both as regards size and coloration, to its maternal parent (*A. roseicollis*) than to the Masked Lovebird. It is to be hoped that further hybrids between these two species will be produced and especially those wherein the parentage is reversed. It will also be of interest to ascertain whether a second filial generation will be a possibility.

BREEDING RECORDS TO DATE

By Dr. E. HOPKINSON, C.M.G., D.S.O.

*(Continued from page 52.)**Alexandrines, etc.*

ALEXANDRINE PARRAKEET (Nos. 380-382). *P. eupatria* (Lonn.).

There are records of the breeding of the three races

Psittacula e. eupatria, the Cingalese Alexandrine,

P. eu. nipalensis (Hodgs), the Nepalese A.

P. eu. magnirostris (Ball), the Andaman Alexandrine or Great-bioled Andaman Parrakeet.

(1) Neunzig (*p.* 722) says *eupatria* was bred at Copenhagen in 1884 and in *B.N. vii*, 279, there is a record of two young being reared by Marmont in France, both in 1906 and 1907.

(2) *nipalensis*: Shore Baily in *B.N. 1914*, 217; 1915, 42, records success (three young reared) in 1914 with "Alexandrines, *P. alexandri*"; they were certainly not that, which is the JAVAN PARRAKEET, and I am practically certain the birds were *Ps. eu. nipalensis*. From a note in *B.N. 1913*, 124, it would appear that these Parrakeets had been bred at least once previously.

(3) *P. eu. magnirostris*. First reared by Baughton-Leigh in 1906, two young being reared and the A.S. Medal awarded. *A.M. 1906*, 336, 342. *magnirostris* was bred by Mrs. Bonestell in California in Jan., 1940, one young bird being reared: a first for the U.S.A. Account given in *Aviculture (U.S.A.)*, 1940, *p.* 174.

The Blue Variety

Mr. Ezra, after years of trying, in 1934 bred a blue youngster from the old blue cock he had had for years and from this a number of young (i.e. "blue-bred"); it was to one of these daughters that the old bird was mated, and the result was two young, one blue, one green, which I saw when about six months old: perfect specimens. Two more young were hatched in the following year (1935), but they died young. The breeder gave a full account in *A.M. 1934*, 238, and in a previous year (1931, 331) he had described success to that date—nine blue-bred young reared. In *A.M. 1939*, 397, Aline Ezra gave an account of the 1934 success; the year's young blue and its father, still alive, the youngster even

handsomer than its parent, and there were also a number of blue-breds in the aviaries.

RING-NECKED PARRAKEET (Nos. 383, 384), *Psittacula krameri* (Scop).

Ps. k. krameri (late *docilis* V), the African race.

Ps. k. manillensis (Fechst). (*torquatus*, authors), the Indian Ringneck.

The Indian bird has been frequently bred, the first success being with Wigand in Germany according to Russ and Neunzig. In the U.K. there have also been successes and here Porter, who reared one young bird in 1900 and a second in 1901, appears to have been the first (see *A.M.* viii, 46). Tavistock in *B.N.* 1918, 209, reported the rearing of two normally coloured young from a pair of which the hen was a lutino, but it was not till 1931 that he actually bred and reared two lutinos—good ones—from one of his pairs of lutinos, and that the worst one. Ezra was also breeding lutinos by this time, and I think his were the parents of Tavistock's; in *A.M.* 1931, 331, he reported that he had seven lutino-bred young but all of them were apparently hens and most of them had laid—the very opposite to what he found with his blue-bred birds, most of which were apparently cocks. In *A.M.* 1939, 401, Aline Ezra describes her father's lutino Ringnecks and tells us that the first two were bred in 1934, and ten more were reared in the next two years, as well as dozens of lutino-breds; the lutinos may be considered fully established at Foxwarren.

The African Ringneck has only been occasionally bred, and the few records are besides ancient and doubtful. Lauder and Brown in the **PARROT** volume of the *Naturalists' Miscellany*, 1933, say "*Psittaculus torquatus* of Senegal has been bred in Paris" and expressed the hope (not yet realized except in Budgerigars and Lovebirds) that soon it will be possible to supply plenty of cage-bred Parrots. According to Tavistock Canon Dutton bred the African bird "some years before the war" (? was this ever recorded.—E. H.). The hybrid record given in Page's book, **AFRICAN × INDIAN RINGNECK**, must also be mentioned here, though all I can find in the way of a record is Page's note in *B.N.* 1911, 123, that "Cannon Dutton had three young hatched, which look like being reared". There is nothing further as to whether they lived or not. This and Tavistock's information very probably refer to the same event.

Hybrids

RING-NECKED × MALACCAN LONG-TAILED PARRAKEET (*Psittacula longicauda* (Bodd.)).

Mrs. Bonestell told me *in lit.*, 20th March, 1940, that two hybrids of this cross were bred by Mrs. Grube at Oaklands, California, in 1937; one lived two years and the other was still alive at the time of writing. (? Was this recorded in print, and where?)

MALACCAN LONG-TAILED PARRAKEET. *Psittacula longicauda* (Bodd.).

A hybrid record; see above.

LAYARD'S PARRAKEET, *Psittacula calthrapae*, Blyth.

Bred for the first time by Mrs. Darnton in Sussex in 1925. Two young were hatched in June and both reared: "self-supporting and as big as the old birds" by 5th September. See full account by the breeder in *A.M.* 1935, 275.

BLOSSOMHEAD PARRAKEET ("Plumhead Parrakeet") (Nos. 385, 386), *Psittacula cyanocephala* (Linn).

Ps. c. cyanocephala, Ceylon and most of India.

Ps. c. bengalensis (Forster (rosa. Bodd)), Bengal to S. China. Burmese Blossomhead.

There are records of the breeding of both races, of both of which Russ was the first breeder *teste* Russ in *Bull.* 1880, 680.

Neunzig (*p.* 725) says that this was in 1872 for *cyanocephala*, and does not mention Russ's breeding of the Burmese race, but says that both races have since been frequently bred by others abroad—once to the fourth generation; he also says that Russ obtained young from a male Burmese paired with an Indian Blossomhead. I know no British record, but surely they have been bred here?

The cross with the male SLATY-HEADED PARRAKEET is also on record.

SLATY-HEADED PARRAKEET, *Psittacula himalayana* (Lesson) (*schisticeps*, Hodgs).

Hybrid record only: SLATY-HEADED × BLOSSOMHEAD.

Bred by Lord Tavistock in 1933, two young birds being reared, *teste* Tavistock *in lit.*, 13th August, 1933. He bred them again in 1936, and recorded the event in *Bird Fancy* of that date.

MALABAR PARRAKEET, *Psittacula melanorhyncha* (Sykes) (*columboides*, Vigors : *peristerodes*, Finsch).

First breeder Tavistock in 1927 ; four young reared (*L'Oiseau*, 1928, 36). One young had been hatched in the previous year, but it only lived ten days. In 1915, Lovell-Keays had almost succeeded in breeding them, having had one young one hatched which died a violent death when a fortnight old (*A.M.* 1916, 267). In *A.M.* 1931, 236, Ezra reports the rearing of a brood in 1931.

JAVAN PARRAKEET, *Psittacula alexandri* (Odhel).

First success : the Adelaide Zoo, 1936-37 ; four young being reared ; see the Annual Report of the South Australian Zoo, September, 1937, and *A.M.* 1936, 309.

DERBYAN PARRAKEET, *Psittacula derbyana* (Fraser).

First bred by Dr. Leon Patrick in California in 1930, two young being reared ; see *Aviculture* (U.S.A.), Nov., 1930, and *L'Oiseau*, 1931, 73, where the award of the French Medal for a first success is announced. Dr. Patrick told me in *lit.* 15th Aug., 1932, that he bred them again in 1931 and 1932, and that one of the 1930 cocks was the father of three of the 1932 birds.

Ezra bred them for the first time in the U.K. in 1933.

BARRABAND'S PARRAKEET (No. 388), *Polytelis swainsonii* (Desm) (*barrabandi*, Sw. preocc).

The earliest record of success is Maillard's in France in 1899 recorded in *Bulletin* for that year, p. 794. Farrar bred them in Yorkshire in 1900, rearing three young birds and gaining the A.S. Medal for a "first" in the U.K. (*A.M.* 1900, 217). In *B.N.* 1918, 207, Tavistock reports success that season, two young being reared, and they have been bred many times by others since.

Hybrids

BARRABAND'S × BLACK-TAILED PARRAKEET.

Russ says this cross was first bred by Kohler in Germany and De Brisay (*Dans nos Volières*, p. 441) says that they were also bred by Cornely and at the Jardin d'Acclimatation, both in 1880. Neunzig, however, mentions neither of these, but only says that a

pair in England mated several times in 1900 and "hatched out" one young hybrid.

BARRABAND'S × ALEXANDRA PARRAKEET.

One was reared by Astley in 1922, which was still alive in 1924; see *A.M.* 1922, 82; 1924, 235, where a coloured plate of the hybrid was given. He had also had two of these hybrids hatched in 1919, but they died young (*A.M.* 1919, 212).

BARRABAND'S × KING PARRAKEET.

Four young which left the nest in July were reared by Tavistock at Lindfield in 1937: see *Bird Fancy*, 31st July, 1937.

BARRABAND'S × CRIMSON-WING.

A first success also Tavistock's, in 1939: see accounts in the *Foreign Bird League Journal*, 1928, 130, and *A.M.* 1939, 398.

Hybrids are also on record with males of the BLACK-TAILED and KING PARRAKEETS.

BLACK-TAILED PARRAKEET (No. 389). "Rock Peplar" *Polytelis anthopeplus* (Lear) (*melanura*, Vigors).

The first breeder in the U.K. was Mrs. Johnstone in 1903, *teste* Butler (*AGB* 208), but they had been bred many years before in France; see De Brisay, *Dans nos Volieres*. In more recent times they have been bred fairly often on both sides of the Atlantic.

Hybrids

BLACK-TAILED × BARRABAND'S PARRAKEET.

BLACK-TAILED × ALEXANDRA PARRAKEET.

The only authority for both these crosses is Page's book, and crosses the reverse way are also on record, as well as that with the male CRIMSON-WING.

CRIMSON-WING PARRAKEET (No. 391), *Aprosmictus erythropterus* (Gm).

Their breeding in France, by the Marquis de Brisay in 1880, and by Delaurier a little later, is recorded in *Bull.* 1883, pp. 395, 689, but according to Russ they have been bred still earlier by Seybold. Neunzig (p. 738) says "breeding has often been successful both in bird-rooms and large cages". In Great Britain Morshead was the first breeder in 1901 (see *A.M.* viii, 34, and *AGB.* ii, 210). Since then there have been a good many other records of success.

*Hybrids*CRIMSON-WING \times BLACK-TAILED PARRAKEET.

Bred by Whitley in 1928, 1929, and 1930, and I think for years after, but never recorded. Four young were the rule in all the broods ; I saw the 1930 brood in the nest in May and one of them was shown at the Crystal Palace in February, 1932 (*A.N.* 1932, 67).

CRIMSON-WING \times SULA ISLAND KING PARRAKEET.

Bred by Tavistock in 1927, three young being reared—the first and so far only record of this cross. See *A.M.* 1927, 259, and *L'Oiseau*, 1928, 38. One of the young hybrids was presented to the Zoo and was still there in 1932 when I saw it, a strikingly handsome bird. Another was exhibited at the January, 1930, Meeting of the B.O.C. with the ALEXANDRA CRIMSON-WING hybrid also bred by the same breeder ; both were males. In *A.M.* 1935, 228, Tavistock reports the death of the old hen, the mother of these hybrids, which he notes here were all unfertile ; he had had the old hen for more than twenty years.

Hybrids are also on record with males of BARRABAND'S, ALEXANDRA, and KING PARRAKEETS.

 ALEXANDRA PARRAKEET (No. 390), *Northipsitta alexandrae* (Gld).

First bred in the U.K. (or anywhere) by Astley in 1912 ; he was awarded both the A.S. and the F.B.C. Medals, see *A.M.* (3), iii, 243, and *B.N.* 1912, 243, 330. He continued to be successful in following years (*A.M.* 1921, 159). A good many have been bred by others since, mostly, I believe, from descendants of Astley's birds. For instance, Tavistock bred them in 1918 (*B.N.* 1918, 207). More recently they were bred by Ezra in 1934, a brood of four from an imported pair received the previous winter (*A.M.* 1932, 9) ; he bred more in following years and had young home-bred birds to dispose of. They have also been bred in Australia ; Cayley (*p.* 138) gives several cases, 1921 onwards.

*Hybrids*ALEXANDRA \times BLACK-TAILED PARRAKEET.

This cross has a place in Page's book, which is also supported by a note of Astley's in *B.N.* 1911, 209, to the effect that " Mr. Fasey

raised a hybrid Alexandra Parrakeet \times Rock Pebbler . . . if I mistake not". (This record can only be regarded as doubtful.—E. H.)

ALEXANDRA \times CRIMSON-WING.

Tavistock in *Cage-Birds*, 15th August, 1925, reported the breeding in his aviaries of this cross that season; two young were hatched, but one died soon after leaving the nest. The other was reared and turned out a cock, though at first thought to be a hen. A first (and so far the only) success; the young bird was shown to the B.O.C. in January, 1930, with CRIMSON-WING \times SULA KING hybrids. See *Bull. B.O.C.* 1930, p. 40.

Cross with males of the BLACK-TAILED and with BARRABAND'S PARRAKEET are also on record.

KING PARRAKEET (No. 392), *Alisterus cyanopygius* (Licht) (*cyanopygius*, V. ; *scapulatus*, Kuhl).

Neunzig (p. 739) says that the first breeder was Kohler of Wissenfels, and that they were also bred in France in 1880; this must be the record (Rousse, 1880) given in *Bull.* 1880, 493, 730. Two British records of success are Salter, 1905 (*A.M.* 1906, 27) and Amsler, 1921 (*A.M.* 1921, 163); only one young bird reared in each case. They were also bred in New Zealand in 1939.

Hybrids

KING PARRAKEET \times CRIMSON-WING.

KING PARRAKEET \times BARRABAND'S PARRAKEET.

The only authority for both these crosses is Page's book. The Barraband cross, the reverse way, has also been bred.

SULA ISLAND KING PARRAKEET (*Alisterus amboinensis sulaensis* (Rehw.).

Only a hybrid record: with the male CRIMSON-WING.

The MOUSTACHE OR BANDED PARRAKEET, *Psittacula a. fasciata* (Müller), had a place on p. 90 of RECORDS, on the strength of its inclusion in Page's book, but as here the only mention is "*vide* Banded Parrakeet", which is conspicuous by its absence, this record can be regarded as worthless, especially as Neunzig says that this Parrakeet has only laid eggs in captivity.

HANGING PARRAKEETS, *Loriculus* (No. 387).

There are two records of the breeding of these birds, but neither is really good.

(1) VERNAL HANGING PARRAKEET, *L. vernalis* (Sparrow), was (according to Neunzig (p. 732)) bred by Herr Nagel-Pritzwalk in 1907; his account of the event ends, "12th October, 1907: two fourteen day young are flying in the bird-room" (did they live; fairly young to be flying.—E. H.). (2) BLUE-CROWNED H.P. *L. galgulus* (L.). On this Neunzig says that it appears that Madame Prowe of Moscow was almost successful in 1907, "one youngster hatched and lived 32 days." This is probably the "breeding in Russia" of *Gef. Welt.* 1907, mentioned by Shore Baily in *A.M.* 1926, and in an Editor's note in *L'Oiseau*, 1926, 107. The cross, BARRABAND'S × ROSELLA (or ? *vice-versa*) is given in Tavistock's, *Parrots* . . . p. 198, but no details.

* * *

THE STORY OF "SPINX"

By "GARRULAX"

"Spinx's" early history, like that of many of our so-called "best" families, had perhaps better be omitted from mention, but, had she been alive to-day she would perhaps have remembered hours of cramped existence in suitcases, in hat-boxes, in copious pockets of mackintoshes, of journeys in aeroplanes, motor cars, trains, ships, of days spent in stuffy ship's pantries, carpenters' workshops, cabin wardrobes, etc. I'm sure they must have been intolerable for her with the exception of frequent feeds of "Granose" with milk and a little honey.

I might mention that "Spinx" was a female Yellow-tailed Black Cockatoo (*Zanda funerea*), a great rarity in captivity even in its own country of Australia. The bird must have been about two months old when she came to me and was then about the size of a Roseate Cockatoo, but rather bulkier. For the first two weeks she thrived apace, but at the beginning of the third week she seemed to "go off", she only took a very little food and this was thrown up again. For several days the bird made an almost continual retching motion and I thought it might have swallowed something that had stuck in its throat.

I had been feeding "Spinx" on a mixture of "Granose" biscuits, crumbled into half a cup of liquid made with a dessert-spoon of sweetened condensed milk, a teaspoon of honey and hot water, this was afterwards mixed with an equal quantity of boiled ground maize. I rather think the honey affected the bird's bowels

or she may have got a slight chill, though I think this was hardly possible as the weather was rather hot at the time.

Usually she would never eat her food cold, it had to be warmed to a certain temperature before she would feed.

“Spinx” was fed three times a day, but this was only when she thought fit and no amount of coaxing would induce her to feed if she thought it was not the proper time.

When I went to feed her, she was usually asleep, lying full length with her head in one corner of the box. Her awakening was not at all in the usual bird manner, she would slowly open her eyes, blink a little, yawn, stretch one wing and then the other and after a time sit up. She would never feed as soon as she awakened, it was only after about half an hour after she had looked around, exercised her wings and got thoroughly awake that she would take any food.

For a good many weeks “Spinx” rather restricted my activities, having to make her food, feed her three times a day, and perform quite a lengthy toilet on her, was a full time job and she took quite as much looking after as a human baby.

As it was impossible to keep the bird at an hotel, a kind friend who I had never met before I landed in Australia asked me to stay with her for as long as I liked, such is colonial hospitality!

“Spinx” was a very clean feeder, or perhaps I should say, I was very careful how I fed her. I always had a damp cloth to wipe her beak and feathers as soon as the meal was over. Once on a small coasting steamer, wishing to spend the day in the “bush” with a friend, I asked the ship’s carpenter if he would feed her. When I got back I found there was more porridge on the bird than in it! This necessitated a very lengthy toilet, consisting of both wet and dry cleaning, the feathers had to be washed carefully with warm soapy water and cotton-wool and fine sand and sawdust carefully shaken into them in order to enable the down to dry quickly.

These Cockatoos are very heavily feathered about the beak, the cheek feathers are lengthy and form into a semicircle and grow forward completely hiding the beak. Unless one is very careful in the feeding these feathers very quickly become messed up. “Spinx” used to like her feathers cleaned and after a meal she

used to hold her head on one side so that she could receive my attentions.

For the first few weeks the bird flourished apace and after a fortnight had increased to about the size of a Lemon-crested Cockatoo. She was a beautiful bird, glossy black in colour, a large patch on the ear-coverts a pale lemon yellow; the lower breast feathers, the under tail coverts, the feathers on the shoulders and under the wings edged with pale yellow; the long tail feathers for about three-quarters of their length were pale yellow spotted with black, the rest black edged with yellow.

After a few weeks the friend who had given me the bird very kindly went to a great deal of trouble and procured another bird for me, this time a male. This was rare luck, having a true pair of these magnificent birds.

Needless to say I was all agog when I received a telegram to say that "Paul Robeson" was being sent by aeroplane and would arrive next Monday. All arrangements for that date had to be cancelled and I was at the Airways office in good time that day waiting for my treasure.

I had a horrible sinking feeling when I saw that there was a department of the Customs in the Airways office. I might mention that all the Black Cockatoos are strictly protected in Australia, and no one, other than Zoological Societies, is allowed to own them. What if the Customs officials heard the bird and came over to see what it was?

The hours drifted by with no news of the aeroplane or the bird. I waited with increasing impatience. What could have happened? The aeroplane had been delayed by bad weather in the mountains. At last hours after the schedule it arrived.

What a noise from the parcels when they arrived in the office! The whole staff and waiting clients looked up in amazement! "Ah, young Galahs?" said the manager. "Yes," I lied. "Thought so, I'd know them anywhere," said he!

There was no Customs examination, Galahs are a pest anyway, so say the Australians. "Paul" was protesting so loudly that he wanted feeding, that a tram or a train ride back home was out of the question, so I had to hail a taxi. "Ah, young Galahs?" said the taxi-man. "Are you taking them to sell?" "Yes," I said on the spur of the moment. "Well what about selling me one

now?” “Not just at the moment, they are too young now,” I said.

At last after an interminable journey, we arrived home and on opening the box a very hungry and grubby bird loomed into view. Talk about eating! He must have been famished, for he ate quite half a pint of the food.

“Paul” was most obviously a male, he had a much wider and heavier beak than “Spinx”. What luck this was. A true pair of the rarest and finest of Australian Parrots. A bird so rarely seen in captivity that only one Australian “Zoo” possessed specimens, and as far as I knew there was only one true pair in captivity in Australia.

They were a delightful pair and were more like a couple of children, and I grew as fond of them as if they had been. I am quite sure they looked on me as their parent!

After a time I could see that the food was not suiting them and I tried all kinds of alternatives but could find no real substitute for the natural food of wood-boring grubs and the oily seeds of certain Eucalyptus. At last I could see that they were gradually dying. They threw up most of their food and became terribly thin, and if one may express it in connection with a bird, hollow eyed. They lingered on for many weeks in spite of everything I could do for them. It was heartbreaking to see them thus. They lost all interest in life and seemed to know that they were dying. I could not bear to see them suffer any longer so I felt the best thing to do was to put them out of their misery. A chemist friend let me have some chloroform and this I soaked in cotton-wool and put in their sleeping box one night.

I must confess that it was with a lump in my throat that I buried the two very emaciated bodies in the morning for I have never owned birds that I was more fond of than these two.

I think few if any of these birds have been reared to maturity. Evidently they need some special food which cannot be substituted by artificial means. Banksians are much easier to rear and the few of those I saw in captivity were all hand-reared and most delightful birds they were.

IN MEMORY OF AN OLD FRIEND

By JEAN DELACOUR

No other birds can make better pets than Parrots, or be more intelligent. In the course of many years spent among birds, I have had dozens of tame and amusing ones, but none has left me a more vivid impression, nor more bitter regrets when it passed away, than the very intelligent and most affectionate Red-headed Conure (*Aratinga rubrolarvata*) which I had from 1922 to 1930.

The majority of tame mammals and birds which become attached to their owners usually do so as a result of clever training, petting, and offering of tempting food. But sometimes one meets with a case of spontaneous attraction and no doubt this was the case with my Conure.

In 1922 I received a consignment of birds from western South America and this Parrakeet was in it—a biggish bird, bright grass green, with scarlet head, bend of wings and thighs, a large white beak and a white ring around the eye. The species is found from Colombia to Peru. The bird, undoubtedly a male, was neither very beautiful nor rare. It did not look wild. We had several more interesting specimens to care for in the consignment, so we cut the feathers on one of its wings so that he could not fly, and let him out on some bushes along the balustrade of the terrace. He stayed there, coming in to feed, and looking very happy.

I had noticed that the bird was tame and even rather aggressive, but there were several other Parrakeets and small Parrots living there under the same conditions and I paid little attention to him, aside from giving him some tit-bits whenever I passed him on my way. After a few months, his flight feathers had grown again and he began to fly. No sooner could he move about with ease than he unhesitatingly picked me out of all people at Clères, following me everywhere I went and settling on my shoulder as often as I permitted.

There was no other reason but his own fancy for the Conure to act in this way. I never gave him anything special to eat, except a few breadcrumbs when I fed other birds in the park, and his proper food was offered to him by keepers whom he never particularly noticed. But, of his own choice, he had taken to my person. Although devoted to me, he kept showing a hot and

impatient temper. When I tried to grab him or to chase him away, he never hesitated to bite, but always lightly, never seriously enough to hurt, at the same time expressing his anger by little cries and contortions. With other people, it was a different story. He proved quite ferocious, attacking savagely and fetching blood. He became furious whenever anyone came close to me while he was sitting on my shoulder.

One day, as I was walking in the park with friends, he appeared flying high, stooped down and alighted on the shoulder of Prince Paul Murat. At that time we were both much of the same build and the Conure mistook him for me. My friend started calling me and as soon as the bird heard his voice and discovered his mistake, he bit the Prince on the neck as hard as he could, which stopped all jokes about the shifting of his affection !

My Conure lived at Clères for eight years at complete liberty, summers and winters, flying all about the place. When I was at home, no one else counted for him. Early in the morning, he was watching for my appearance at a window of my bedroom and followed me from room to room, from floor to floor, never coming in, as he realized that he had not the right to enter the house. As soon as I came out, he was on my shoulder and went everywhere with me. When I was tired of carrying him, he would follow from tree to tree. But if I went too far from the house—over a mile—he would suddenly leave me and return quickly on the wing. He hated being too far from his usual surroundings. He gave me every proof of his affection, warbling at my ear, gently picking at my neck, playing with my fingers and even offering me food, the politest of all gestures in a Parrot. When I sat down, he would first play on my knees, then cuddle himself in my arms and go to sleep.

Every autumn and winter, during my long trips abroad, the Conure would take again to an independent life ; he would sometimes come to Mr. Fooks or to some keeper and demonstrate to them. But they were ignored as soon as I returned. Even after a year's absence his feelings remained unaltered. As soon as I landed from the car, he was there to welcome me home, showing extreme pleasure and excitement.

Alas, during one of my long absences, in 1930, my Conure died after a few days' illness, I was told. He might have been old,

as he was adult when he had arrived. His loss was a real sorrow to me.

* * *

TURQUOISINE PARRAKEETS

By FRANCES E. MATTHEWS

For some time I have carefully studied past numbers of the AVICULTURAL MAGAZINE for information concerning the breeding of these Parrakeets. They seemed to me very desirable birds, being beautiful, graceful in flight, and not too easy to acquire.

Most of the Breeding Records seem to agree that these birds though beautiful, are for many reasons very uncertain, and therefore disappointing. Yet I feel sure that there are some people who could relate excellent results—but they do not trouble to do so.

My experience of Turquoisines is insignificant, but for what it is worth I give it. A very good looking pair came my way, and the hen started to nest in June. She laid six eggs and brooded them as though her life depended on it. But when no birds appeared she sat on over the time considerably. Then I found two fully hatched dead birds and another fertile egg. It did not seem to be the fault of either parent. The birds had not lived.

Very soon another nest was started with fewer eggs. Two birds were hatched. These grew splendidly and are now (September), flying about everywhere and feeding themselves heartily. The hen has insisted on starting another nest, though I have discouraged it. This pair of Turquoisines seem to be very well matched—ideally devoted to each other and to the young ones. No recommended foods for the latter were necessary. The cock looked after them too well, then they went straight and helped themselves at his table. I think the young ones are cock and hen by size, etc. No red tab has yet appeared on the larger bird. The birds have never lacked seeding grass and multitudes of other wild seeding plants. Lettuce has been ignored. They looked charming wandering about amongst the "Poa Annua" with which the flight is planted.

The coloured illustration of a pair of Turquoisines in the AVICULTURAL MAGAZINE is lacking in depth of colour, it also does

not show the light or gold line which edges the primary wing feathers. These birds are like their smallest relations, the Budgerigar, in their steadiness and adaptable ways. They seem to know what you want to do for them and to help you.

Many can record instances of the sagacity and resource shown by Budgerigars.

At one time I reared a great many Budgerigars. They were not brought indoors nor were especial efforts made to tame them. One cock we called "Chappie"; he had a family and a rather feeble mate. Attending to inside cleaning of open shelter one day one of the babies came on my arm. Chappie was at the end of the flight. I called to him, "Oh, Chappie, come and feed the poor baby!" He flew straight to my arm and fed the baby. He seemed so intelligent I thought I would try it again later on. This time he was taking off to fly in another direction, but he turned back and fed the baby on my shoulder where the little one had now arrived.

My other interesting Budgerigar I sold to a lady; some-time afterwards I telephoned to know if he was satisfactory. She exclaimed, "I would not part with Tommy for any money. He is the father of the aviary, he settles all the quarrels!" She then mentioned "A nesting Budgie lost her mate. She had a family to feed. Tommy had just finished bringing up his own family, but he took over this other nest, and fed the family till they left it."

* * *

REVIEW

CUCKOO PROBLEMS. By E. C. STUART BAKER, C.I.E., O.B.E., F.L.S., M.B.O.U., H.F.A.O.U., etc. Price 25s. H. F. and G. Witherby, Ltd., 326 High Holborn, London, W.C. 1.

In the volume of this Magazine for 1941 (page 28) we reviewed *The Truth about the Cuckoo*, by Edgar Chance, a book containing many very valuable and important observations and conclusions, but dealing only with the bird in these islands, and a limited number of individuals. Now we have a book by one of the leading ornithologists of the world who has not confined his studies to one race of the Cuckoo or a limited number of specimens, but has studied the Cuckoos of the world and so is able to present a picture from a very much wider angle than has been done by any previous writer. No other has had such qualifications, for his investigations cover a period of nearly seventy years, and his collection of Cuckoos' eggs alone runs into some 6,000.

The Cuckoo is a bird that demonstrates evolution constantly proceeding. In this country the variation in the colour of its eggs is less than it is farther to

the East. It would appear that the bird is a comparatively recent visitor to these islands, having extended its range from the East, and here evolution, as it affects the colour of the eggs, has not gone so far as it has there. It is necessary for the survival of the species that its eggs should present sufficient similarity to those of the birds in whose nests they are placed to prevent their detection and consequent rejection or desertion, and the author brings much evidence to show that rejection or desertion does take place here frequently, though the greater the similarity between the eggs the lower is the percentage of desertions or rejections. In the East evolution has proceeded farther and the likeness of the Cuckoos' eggs to those of the dupes is more marked. Darwin's Law of the Survival of the Fittest as applied to the Cuckoo is in force, those that produce eggs that are perfect in their likeness to the others in the nest being accepted while those that are imperfect in this respect are likely to be detected and rejected to the detriment of the species. Each hen Cuckoo victimizes one particular species or group of species with similarly marked eggs and her eggs and those of her descendants tend to become more and more like those of the victims. How far resemblance has been achieved may be judged from the beautifully drawn coloured plates by Miss Edna Bunyard.

The question as to how the egg is placed in the nest, which has for so long puzzled naturalists, is dealt with very fully. There is plenty of evidence to prove that it is actually laid direct into the nest when the position of this makes it possible, though not in the same way as that adopted by most birds. The bird apparently stands with her feet on either side of the nest while she lowers her body into a suitable position to deposit the egg in the nest. But when this method is not possible she can and does project the egg into the nest while holding on by her feet to adjacent objects. There would seem to be still a third method used where these two are not applicable, and that appears to be the one believed in for so long by ornithologists, namely, by placing the egg in the nest by the bill.

These and other subjects connected with the life of this most interesting bird are dealt with exhaustively by one who has probably studied the subject more intensively than any other person.

D. S-S.

* * *

NOTES

ACKNOWLEDGMENT

The Editor acknowledges with many thanks the permission given by Aberdeen Journals, Ltd., to reproduce their photograph of Blue-fronted Amazon Parrots as the frontispiece of this number.

CORRECTION

May I be allowed before the incident is forgotten to correct my statement in the May-June number of the AVICULTURAL MAGAZINE that Blue Snow Goose chicks have lighter coloured heads and hind necks. This is incorrect, it being overlooked at the time that these particulars were taken from a brood which eventually proved to be hybrids.

Referring to the hybridization of Geese. We never encourage it, but have found that certain species when kept in confined space and not strictly in pairs have a tendency to hybridize. This season, owing to war conditions and the reduction of certain males, we have no less than five distinct crosses at Lilford. Four of which (male parent first) are Lesser Snow \times Grey Lag, Lesser Snow \times Bernacle, Ashy-headed \times Bernacle, Ashy-headed \times White-fronted. The fifth fertile eggs from a female Barhead having access to males only of Emperor, Cackling, Red Breasted, Brent, Ruddy-headed, and Wild Chinese or Swan Goose, none of which had been seen to pair.

A. F. MOODY.

LAURA—A HAWKHEADED PARROT

That Parrots delight in having their heads scratched is common knowledge, but as far as I can learn, the Hawkhead is the only species which enjoys being treated like a lap dog. My bird is never so happy as when she is allowed to lie on my lap for a cuddle, and if permitted will spend a couple of hours in this fashion with her head in my hand. She knows that her special time for this treat is Sunday afternoon, and is not backward in voicing her displeasure if by some untoward chance I have to deprive her of it.

She has another peculiarity in that she insists on sleeping in a closed basket like a kitten, only unfortunately she employs herself in biting her bedclothes and the basket if she wakes before the usual time for getting up. Her cage stands in the kitchen window, and she thoroughly enjoys sitting on the window sill and "carrying on" with the tradesmen, but above all with the gardener for whom she has a particular liking. Though she does not talk, she can perfectly make herself understood and she rules the roost as far as the kitchen staff is concerned. Unless the weather is really atrocious she expects to be carried into the garden to her own special plum tree, where she amuses herself for an hour or more and then she shouts to be brought indoors. If, however, the day is wet she demands her special lilac tree for her bathroom, and climbs and rolls about among the wet leaves until she is soaked. She cannot grasp why at this time of the year the lilac should offer her nothing but bare twigs, and after exploring them she angrily flounced down to the lawn where she could at least roll in the wet grass. One of her self-imposed duties is to come with me to feed the poultry, particularly the ducks. When the latter are happily feeding, Laura stalks them from behind and runs at them with a loud shout. This never fails to scatter them in alarm, and Laura chuckling delightedly follows up her advantage as fast as her short legs will carry her.

She has real courage in danger. One day when she was on the lawn I was upstairs, and happening to look out of the window was horrified to see her with her crest up defiantly facing a large tom cat. Had she turned tail the cat would have undoubtedly seized her, but he was perplexed by her fearlessness, and his hesitation gave me time to rush to the rescue. Laura took the whole business very calmly, but I think she was relieved to see me.

E. F. CHAWNER.

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The Editor acknowledges with much gratitude the invaluable help given by Mr. David Seth-Smith in compiling the index to subjects, alphabetical list of contributors, and list of plates which are published with this number.

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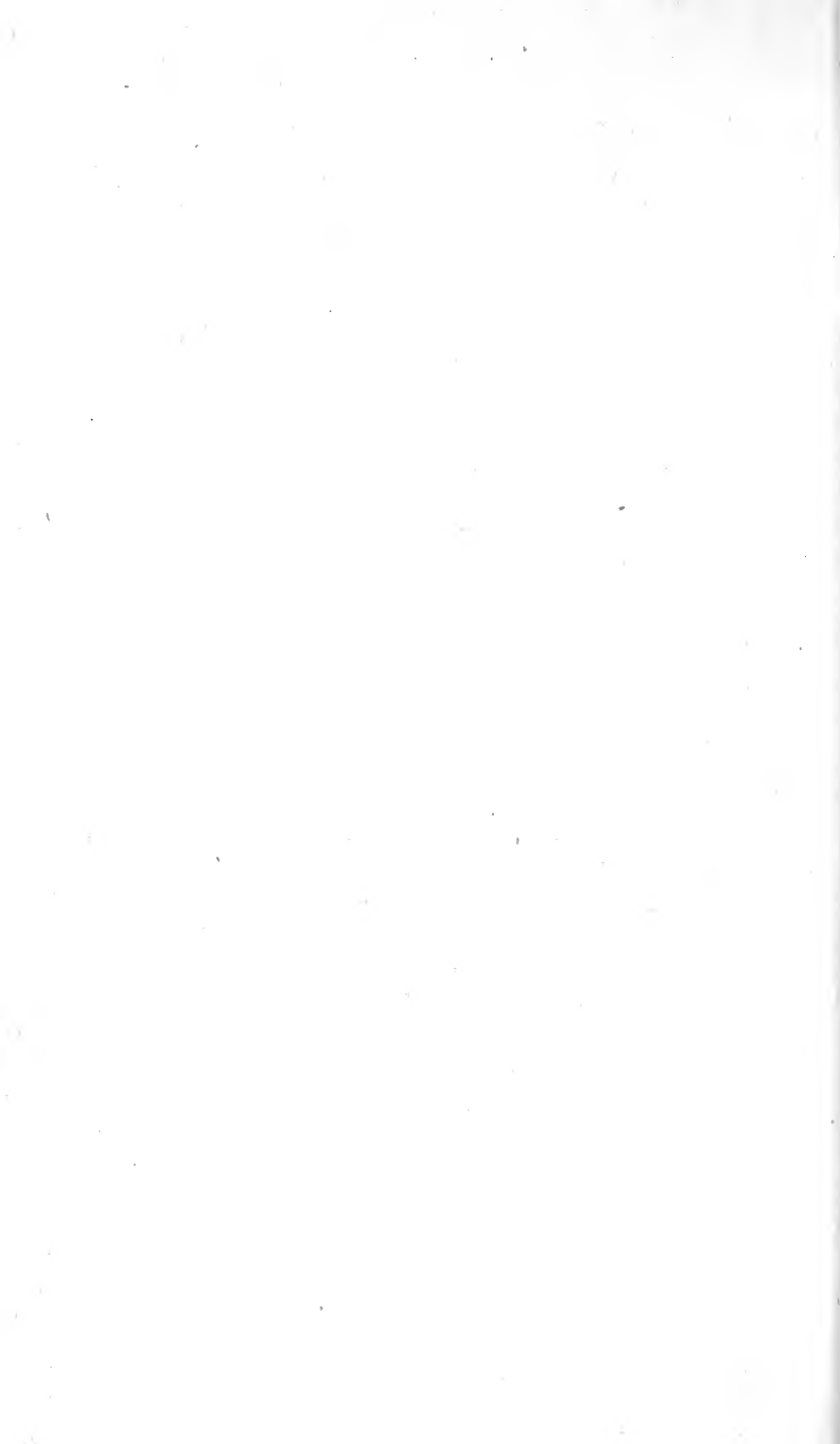
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- ANDERSON, A. B. ; The Aviary, Pittencreeff Park, Dunfermline, Fife. (May, 1939.)
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- BUXTON, J. LEAVESLEY, F.Z.S. ; Brightlea, 227 Streetsbrook Road, Solihull, Birmingham.
- CAMBESSEDES, JEAN ; 18 Boulevard Arago, Paris 13^E. (Sept., 1934.)
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- COX, Mrs. B. ; Marshwood Manor, Bridport, Dorset.
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- GLOVER, PERCY H., F.Z.S. ; Broadlands, Fareham, Hants. (June, 1931.)
- GODDARD, H. E. ; Lerwick, Bannerdown, Batheaston, Somerset. (Feb., 1899.)
- GODDARD, Mrs. ; The Cottage, Buckland, Faringdon, Berks. (Feb., 1923.)
- GOLDER, H. G., F.Z.S. ; Hon. Secretary and Treasurer, Norwich Alliance All. England C.B.d., 37 Crown Road, Norwich. (June, 1931.)
- GOODALL, A. W. ; 182 Birchfield Road, Widnes, Lancs. (March, 1933.)
- GOODHEART, L. McCORMICK ; Address unknown.
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- GUBBAY, Mrs. MAURICE ; Foxwarren Park, Cobham, Surrey. (Feb., 1928.)
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- GURNEY, Miss DIANA ; North Runcton Hall, King's Lynn. (July, 1927.)
- GUY, CHARLES P. ; Trevoze, Mill Lane, Wednesfield, Staffs. (Sept., 1942.)
- HADDEN, NORMAN G. ; Underway, West Porlock, Somerset. (Jan., 1939.)
- HAGGARD, V. D. ; Zoological Gardens, Adelaide, South Australia. (June, 1941.)
- HALVERSON, A. W. ; 5705 West Erie Street, Chicago, Ill., U.S.A. (April, 1937.)
- HAPPE, PAUL ; 44 Avenue Eng Plasky, Bruxelles, Belgium. (Aug., 1935.)
- HARE, Dr. TOM, M.D., B.V.Sc., M.R.C.V.S. ; 529A Finchley Road, London, N.W. 3. (Sept., 1942.)
- HARMAN, Miss KNOBEL ; "Lindeth," Peaslake, Surrey. (Sept., 1928.)
- HARVARD UNIVERSITY ; Museum of Comparative Zoology, Cambridge, Mass. U.S.A.
- HAWKE, THE HON. MARY ; Oakfield, The Lane, Partridge Green, Sussex. (Rejoined.)
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- HENDERSON, Miss OONA, F.Z.S. ; Hurst Close, Bracknell, Berks. (Sept., 1934.)
- HIGHAM, WALTER E., F.R.P.S., G.R.F.S., F.Z.S., M.B.O.U. ; The Oaks, Clayton-le-Dale, near Blackburn, Lancs. (Jan., 1934.)
- HILL, Professor W. C. OSMAN, M.D. ; Medical College, Ceylon. (Dec., 1939.)
- HIRST, ARNOLD ; P.O. Box 262DD, Sydney, N.S.W., Australia. (April, 1929.)
- HIRST, ROBERT S. ; Swincliffe House, Gomersal, near Leeds. (Rejoined.)
- HOLLAS, Mrs. K. E. ; Parsonage Farm, Highworth, Wilts. (Oct., 1922.)
- *HOLLOND, Miss GLADYS M. B. ; Great Ashfield House, Bury St. Edmunds, Suffolk. (March, 1930.)
- HOLT, Miss ESTHER ; Axholme, Noctorum, Birkenhead, Cheshire. (Jan., 1934.)
- HONE, Capt. T. N. ; Boshny House, Ledbury, Herefordshire. (Nov., 1927.)
- HOPKINSON, EMILIUS, C.M.G., M.A., M.B.Oxon., D.S.O., F.Z.S. ; Wynstay, Balcombe, Sussex. (Oct., 1906.)
- HORNE, DOUGLAS PERCY ; Audley Lodge, Addlestone Park, Surrey. (Sept., 1928.)
- HORNER, Miss D. ; Riccall, York. (Aug., 1931.)
- HOUSDEN, Major E. F., M.C., T.D. ; Hillside, Harrow-on-the-Hill, N. (Jan., 1934.)
- HOUSDEN, Dr. LESLIE ; Caldecotts, Church Square, Basingstoke, Hants. (March, 1933.)
- HOVELL, S. ; 29 Woad Lane, Long Sutton, Lincs. (June, 1942.)
- HUGHESDON, V. C. ; Hughesdon and Davis (Solicitors), 16 Barrack Street, Sydney, N.S.W., Australia. (Oct., 1940.)
- HUMPHRIES, WALTER JOHN ; 32 Cedric Road, Crumpsall, Manchester, 8. (Feb., 1931.)
- HURLBURT, Dr. W. E. ; Vineland, Ontario, Canada. (June, 1939.)
- HUTCHINSON, Miss ALICE ; address unknown. (Aug., 1907.)
- ILES, GERALD ; Zoological Gardens, Belle Vue, Manchester, 12. (Jan., 1940.)
- INDGE, H. J., F.Z.S. ; Trimstone, Thorpe, Nr. Chertsey, Surrey. (June, 1940.)
- ISENBERG, A. H. ; Box 88, 647 Runnymede Street East, Palo Alto, California, U.S.A. (Aug., 1926.)

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 JARDIN ZOOLOGICO DE BUENOS AIRES ; Buenos Aires, Argentine. (Feb., 1940.)
 JARVIS, Miss I. F. ; The Old Manor, Salisbury. (Aug., 1930.)
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 JONES, C. BUCKINGHAM ; Dibrugarh, Assam. (Feb., 1938.)
 JONES, F. T. ; Lower Peover, Cheshire. (Oct., 1933.)
 JONES, S. B. ; 265 Northway, Maghull, Nr. Liverpool. (Sept., 1934.)
 JONES, T. J. ALEX. ; Brynley, 5 Fields Park Road, Newport, Mon. (Oct., 1940.)
 JONES, W. A. ; 54 Stockwell Park Road, S.W. 9. (Feb., 1933.)
- KEATOR, BEVERLEY, R.F.D. ; 2 Westport, Conn., U.S.A. (June, 1924.)
 KEMP, ROBERT ; 5 Rose Hill, Lostwithiel, Cornwall. (March, 1926.)
 KERR, J. ERNEST ; Harviestoun, Dollar, Scotland. (March, 1927.)
 KEWLEY, Mrs. M. A. ; Old Court House, Whitchurch, Aylesbury, Bucks. (Sept., 1910.)
 KING, HAROLD ; 41 Compton Road, Sherwood, Nottingham. (Rejoined.)
 KINSEY, ERIC C. ; Box 76, Manor (Marin County), California, U.S.A. (Aug., 1936.)
 KNOBEL, Miss E. MAUD, F.Z.S. ; Lindeth Lodge, Peaslake, Surrey. (Aug., 1916.) (*Hon. Mem., Hon. Secretary and Treasurer.*)
 KREYDT, ROBERT V. ; 1205 Putnam Street, Olean, N.Y., U.S.A. (Jan., 1942.)
 KRUG, EDWARD A. ; 300 West Adams Street, Chicago, Ill., U.S.A. (March, 1940.)
- LAIDLAY, J. C. ; Lindores, Fife, Scotland. (April, 1929.)
 LAKE, GEORGE D. ; Audrey, Burghfield Common, Mortimer, Berks. (Sept., 1937.)
 LAMBERT, Miss LESLEY DOUGLAS ; Beeston Hill, Leeds. (Jan., 1937.)
 LANGHAM, Sir CHARLES, Bart. ; Tempo Manor, Co. Fermanagh, Ireland. (July, 1932.)
 LAW, Dr. SATYA CHURN, F.Z.S., M.B.O.U., M.A., B.L., Ph.D. ; 50 Kailas Bose Street, Calcutta. (1919.)
 LAWRENCE, W. H. ; 6559 Yew Street, Vancouver, B.C., Canada. (Dec., 1939.)
 LAX, J. M. S. ; Southfield, Crook, Co. Durham. (Jan., 1930.)
 LEACH, C. F. ; Woodview, Park Road, Ashted, Surrey. (June, 1914.)
 LEWIS, J. SPEDAN, F.Z.S. ; Leckford Abbess, Stockbridge, Hants. (Sept., 1924.)
 LIVERMORE, JOHN W. ; 130 East End Avenue, New York City, U.S.A. (June, 1941.)
 LODGE, GEORGE E. ; F.Z.S., Hawkhouse, Upper Park Road, Camberley, Surrey. (May, 1923.)
 LOUWMAN, P. W. ; 4 Teylingerhorstlaan, Wassenaar, Holland. (Aug., 1936.)
 *LOW, Dr. G. CARMICHAEL ; 7 Kent House, Kensington Court, W. 8. (May, 1939.)
 LOWE, Rev. J. R. ; The Vicarage, Coln St. Aldwyn, Fairford, Glos. (June, 1927.)
 LYON, Capt. the Hon. MICHAEL ; Glamis Castle, Glamis, Forfarshire. (May, 1927.)
- McCANCE, DAVID ; Strand Town, Belfast. (July, 1932.)
 McDOWALL, KENNETH OF LOGAN ; Port Logan, Wigtownshire. (Sept., 1938.)
 MCGILL UNIVERSITY ; Montreal, Canada.
 McLINTOCK, Miss M. H. ; The Grove, Catton Grove Road, Norwich. (July, 1927.)

- McMILLAN, Dr. A. ; New Romney, Kent. (March, 1930.)
- MACKLIN, C. H., M.R.C.S., L.R.C.P., F.Z.S. ; 23 Church Street, Ampthill, Beds. (May, 1923.)
- MAIRAUX, E. (Ingénieur Agronome I.A.G.) ; 41 Rue de la Ruche, Bruxelles, Belgium. (July, 1929.)
- MALISOUX, IVAN ; Beez, Namur, Belgium. (Feb., 1936.)
- MARSH, E. G. ; Stoke Bishop, Drake's Avenue, Exmouth. (Sept., 1935.)
- MARSHALL, E. ; Hillside, Cadewell Lane, Shiphay, Torquay. (Oct., 1941.)
- MARSHALL, L. F. ; 65 Fitzroy Avenue, Harborne, Birmingham 17. (Sept., 1937.)
- MARTIN, A. ; 27 Yoxall Road, Shirley, Nr. Birmingham. (Oct., 1930.)
- MARTIN, H. C. ; Las Cãnas, 44b Coper's Cope Road, Beckenham, Kent. (Jan., 1897.)
- MASON, Miss EVA INGLIS ; Peppercorn Cottage, Burton, Christchurch, Hants. (Aug., 1934.)
- MATTHEWS, Mrs. W. M. ; Sarsdenfield, Camberley, Surrey. (May, 1935)
- MAXWELL, C. T. ; 1 Shardscroft Avenue, Herne Hill, S.E. 24. (Dec., 1908.)
- MAXWELL, P. H. ; Ebberley Hill, St. Giles, near Torrington, N. Devon. (Oct., 1929.)
- MAXWELL-GAVIN ; Monreith, Whauphill, Wigtownshire. (Aug., 1941.)
- *MAXWELL-JACKSON, Miss M. ; Percy House, Scotton, Knaresborough, Yorks. (Jan., 1913.)
- MAYER, F. W. SHAW ; Wulfruna, 88 Concord Road, Homebush, Sydney, Australia. (Aug., 1922.)
- MEESER, F. C. S. ; P.O. Box 4993, Coronation Building, 23 Simonds Street, Johannesburg, South Africa. (July, 1937.)
- MERTENS, MARCEL (Ingénieur) ; Hotel du Commerce, Saint Laurent du Sape, Ordèche, France. (April, 1938.)
- MEYER, JOHN D. ; c/o Berol Lodge, Chappaqua, N.Y., U.S.A. (Sept., 1938.)
- MILLIGAN, H. ; Upper Manor Farm, Leckford, Stockbridge, Hants. (March, 1937.)
- MITCHELL, HAROLD A. ; 130 Broomhill Drive, Broomhill, Glasgow, W. 1. (Jan., 1943.)
- MOODY, A. F. ; Lilford, Oundle, Peterborough. (July, 1926.)
- MOORE, ROBERT T. ; RR. No. 1, Box 28a, Pasadena, California, U.S.A. (July, 1928.)
- MORRISON, A. ; St. Mary's Ridgway Road, Farnham, Surrey. (Jan., 1932.)
- MOTT, B. ; 11 Wheleys Road, Edgbaston, Birmingham. (Rejoined.)
- MOUNTAIN, Capt. WALTON ; Groombridge Place, Kent. (Feb., 1923.)
- MURPHY, JOHN (District Commissioner) ; Kwale, Digo District, Kenya Colony. (Oct., 1932.)
- NEWMAN, T. H., F.Z.S., M.B.O.U. ; Verulam, 46 Forty Avenue, Wembley Park, Middlesex. (May, 1900.) (*Hon. Mem.*)
- NEWMARCH, C. T., F.Z.S. ; Gamage's Ltd., Holborn, W.C. (Aug., 1915.)
- NICOL, HAMISH, F.R.C.S., F.Z.S. ; Hillside, Christchurch Road, Hampstead, N.W. 3. (Jan., 1926.)
- NIGHTINGALE, Capt. F. B., F.R.I.B.A. ; 47 West Side, Wandsworth Common, S.W. 18. (Dec., 1933.)
- NORCROSS, HERBERT ; Normanhurst, 22 Mount Road, Middleton, Lancs. (March, 1930.)
- NORDHOFF, CHARLES B. ; Hope Ranch, Santa Barbara, Calif., U.S.A. (Aug., 1937.)
- NORRIS, KENNETH A. ; Elmstone, Highfield Road, Purley, Surrey. (June, 1939.)

- OSTREHAN, CLEMENT ; Kington Rectory, Worcester. (Jan., 1928.)
- PAM, Major ALBERT, F.Z.S. ; Wormleybury, Broxbourne, Herts. (Jan., 1906.)
- PAPE, Mrs. A. M. ; Forest Lodge, Binfield, Berks. (Oct., 1937.)
- PARTIDGE, W. R., F.Z.S. ; Larches, near Fladbury, Pershore, Worcestershire. (April, 1934.)
- PEARSE, Mrs. ; Channel View, Bembridge, Isle of Wight. (Rejoined.)
- PEAT, RODERICK M. ; 11 Ironmonger Lane, London, E.C. 2. (June, 1940.)
- PHILLIPS, C. P. ; Swans Nest, Dorchester, Oxford. (Nov., 1940.)
- PHIPPS, Mrs. ; c/o Standard Bank of S.A., Commissioner's Street, Johannesburg, South Africa. (Jan., 1935.)
- PICKERING, ROWLAND H. E. U. ; Thunder Hall, Ware, Herts. (Feb., 1936.)
- PICKFORD, RANDOLPH JOHN ; Etherley Lodge, near Bishop Auckland. (Feb., 1903.)
- PITT, W. S. ; Wildwood, Silverdale Avenue, Walton-on-Thames, Surrey. (March, 1934.)
- PLATH, KARL ; 2847 Giddings Street, Chicago, U.S.A. (July, 1924.)
- POLTIMORE, Lady ; Court Hall, North Molton. (Jan., 1926.)
- POPHAM, Mrs. LEYBOURNE ; Hunstrete House, Pensford, near Bristol. (July, 1937.)
- PORTER, SYDNEY, F.Z.S. ; The White Gates, Stenson Road, Derby. (April, 1920.)
- POTTER, BERNARD E., M.B., M.R.C.S., L.R.C.P., F.Z.S. ; 2 Harley Street, W. 1. (March, 1914.)
- POTTER, W. H. ; Whetherill, Fitzillian Avenue, Harold Wood, Essex. (July, 1926.)
- PRESTWICH, ARTHUR A. ; Chelmsford Road, Southgate, N. 14. (Rejoined.)
- PRINCETON UNIVERSITY LIBRARY ; U.S.A.
- PUDDLE, F. C., V.M.H. ; Bodnant Gardens, Tal-y-Cafn, Denbighshire. (May, 1940.)
- PYE, Miss L. ; High Street, Haslington, Crewe. (March, 1938.)
- QUEBEC ZOOLOGICAL GARDEN ; Charlesbourg, P.Q., Canada. (Nov., 1940.)
- QUINCEY, R. S. DE Q. ; The Vern, Bodenham, Hereford. (April, 1913.)
- RAMPTON, A. ; South Lake, Woodley, Berks. (Dec., 1935.)
- RAVEN, WILLIAM HENRY ; 29 Cavendish Road, E. ; The Park, Nottingham. (Dec., 1939.)
- RAWNSLEY, A. H., Sqd. Leader, R.A.F. Station, Northolt, Middlesex. (Jan., 1943.)
- REVENTLOW, AXEL ; Inspektar, Zoological Garden, Kobenhavn F., Denmark. (Jan., 1928.)
- RIPLEY, S. DILLON ; Division of Birds, U.S. National Museum, Washington, D.C., U.S.A. (Sept., 1937.)
- RISDON, D. H. S., F. Lt/Lieut. ; "Remura," 130 Green Lane, Northwood, Middlesex. (Jan., 1934.)
- ROBERTS, Miss IDA ; Oriana, Montpelier Road, Hobart, Tasmania. (*Hon. Mem.*)
- ROBINSON, Mrs. T. E. ; Cliff Hotel, San Francisco, Calif., U.S.A. (June, 1935.)
- RUDKIN, FRANCIS H. ; R.I., Box 31, Fillmore, California, U.S.A. (May, 1902.)
- RUMSEY, LACY ; 23 Rua de Serpa Pinto, Villa Nova de Gaya, Oporto, Portugal. (April, 1919.)
- RYAN, Sir G. E. ; Address unknown. (June, 1931.)
- SCHMIDT, PAUL ; Senta, Yugoslavia. (March, 1934.)
- SCHUYL, D. G. ; Kralingscheweg 332, Rotterdam, Holland. (Jan., 1914.)

- SCOTT, A. H. ; Blissford Pool, Fordingbridge, (March, 1934.)
- SCOTT-HOPKINS, Capt. C. ; Low Hall, Kirby Moorside, Yorks. (July, 1928.)
- SEPPINGS, Lieut.-Col. J. W. H., F.Z.S. ; c/o Lloyd's Bank, Ltd., Cox & King's Branch (G.3), 6 Pall Mall, London, S.W. 1. (Sept., 1907.)
- SETH-SMITH, DAVID, F.Z.S., M.B.O.U. ; "Brabourne," Poyle Road, Guildford, Surrey. (Dec., 1894.) (*Hon. Mem.*)
- SHAKESPEARE, WALTER ; Sefton, St. George's Hill, Weybridge. (Aug., 1926.)
- SHAND, Dr. W. PATERSON ; 10 Wilson Street, Derby. (Dec., 1940.)
- SHEARING, A. P. ; The Aviaries, Foxwarren Park, Cobham, Surrey. (Dec., 1931.)
- SHEFFIELD CITY LIBRARIAN ; Central Library, Sheffield. (June, 1941.)
- SHERBROOK, WILLIAM ; The Old Vicarage, Tadworth, Surrey. (April, 1931.)
- SHERRIFF, A., F.Z.S. ; Edge Hill, 8 Ranulf Road, N.W. 2. (March, 1923.)
- SHERTON, WILLIAM S. ; Otley Hall, Ipswich, Suffolk.
- SIBLEY, C. L. ; Sunnyfields Farm, Wallingford, Conn., U.S.A. (Jan., 1934.)
- SILVER, ALLEN, F.Z.S. ; Birdsacre, Llantarnam, Mon.
- SIMPSON, H. W. ; 6 Barry Road, Stonebridge, Willesden, N.W. 10. (Nov., 1924.)
- SIMPSON, Mrs. M. K. M. ; 98 Pittencreeff Street, Dunfermline, Fife. (May, 1937.)
- SIMSON, Capt. RUPERT, O.B.E. ; The New Inn, Kidmore End, nr. Reading. (July, 1932.)
- SINCLAIR, O. E. ; 60 South Ridge Road, Durban, Natal, South Africa. (April, 1939.)
- SLADE, G. J. ; Shenley, 21 Wilton Crescent, Southampton. (Feb., 1915.)
- SMITH, ERNEST WILFORD ; 15 Kingsway Road, Leicester. (Oct., 1941.)
- SMITH, PAUL H. ; 11 Parkhill Road, Hampstead, N.W. 3. (Aug., 1941.)
- SMITH, W. PROCTOR, F.Z.S. ; Bexton House, Knutsford, Cheshire. (Nov., 1917.)
- SMITH, Mrs. WIKOFF ; Morris Avenue, Bryn Mawr, Penna, U.S.A. (Jan., 1935.)
- SOUTHPORT CORPORATION, CURATOR OF ; Hesketh Park, Southport. (Jan., 1904.)
- SPENCER, HENRY ; Worton Askrigg, Yorkshire. (Sept., 1928.)
- SPINKS, M. M. ; Tetherstones, Doddington Ridge, near Wellingborough. (Aug., 1940.)
- SPRAWSON, Professor EVELYN, M.C., D.Sc., M.R.C.S., F.Z.S. ; Cranford, Welcomes Road, Kenley, Surrey. (June, 1923.)
- SPURWAY, N. B. ; Delamere, 325 London Road, Leicester. (April, 1923.)
- SQUIRE, E. O. ; Basmead Manor, St. Neots, Hunts. (June, 1939.)
- STARK, J. ; Woods Cottage, Haddington, Scotland. (Jan., 1924.)
- STEINBECK, J. W. ; P.O. Box 832, Concord, California, U.S.A. (March, 1939.)
- STEYNE, ALAN N. ; American Embassy, 1 Grosvenor Square, W. 1. (Sept., 1932.)
- STIGAND, Mrs. PEARSALL ; Antica Casa Colonica, 19 Via Augusto Baldesi, San Gervasio, Florence, Italy. (Dec., 1932.)
- STOKES, Capt. H. S., F.Z.S., M.B.O.U., M.C. ; Longdon, Rugeley, Staffordshire. (Oct., 1922.)
- SUGGITT, ROBERT ; Suggitt's Lane, Cleethorpes, Grimsby. (Dec., 1903.)
- SUTTON, PETER ; Speedwell, Farnham Lane, Langton, Kent. (Feb, 1939.)
- SWEETNAM, Rev. Preb. J. E., F.B.S.A. ; The Rectory, Enborne, Newbury, Berks. (Feb., 1931.)
- SYKES, JOHN ; Whitehouse Cottage, Inveresk, Musselburgh, Midlothian. (Jan., 1912.)
- TARONGA ZOOLOGICAL PARK TRUST ; Mosman, Sydney, Australia. (Aug., 1913.)
- TEAGUE, P. W. ; Lybrook, Broadway, Worcestershire. (June, 1930.)

- TEBBITT, MICHAEL ; 8 Malpas Drive, Pinner, Middlesex. (July, 1937.)
- TENNANT, HON. STEPHEN ; Wilsford Manor, Salisbury. (April, 1926.)
- THOMAS, F. E. ; "Edendale," Creswick Road, Springfield Park, Acton, W. 3. (Oct., 1931.)
- TRAVERS, MRS. J. ; Windmill Cottage, Mayfield, Sussex. (Dec., 1903.)
- TUNES, A. W. ; Elmside, Vicarage Road, Sunbury-on-Thames, Mdx. (Feb., 1939.)
- TURNER, A. GEOFFREY ; Hungerford Park, Berks. (July, 1934.)
- TURNER, H. B. ; Malverleys, near Newbury. (April, 1928.)
- TURNER, PHILIP W. ; Arley, near Coventry, Warwickshire. (Jan., 1942.)
- TURNER, WALTER ; 28 Queensbury Road, Penshurst, N.S.W., Australia.
- TYSER, MRS., F.Z.S. ; Gordonbush, Brora, Sutherland, N.B. (Jan., 1934.)
- UNDERWOOD, H. ; The Wheatsheaf Hotel, Burton-Joyce, Notts. (Jan., 1939.)
- UNDY, EDWARD JOSEPH ; 3 Batley Road, Wakefield. (May, 1940.)
- VALENTINE, ERNEST ; 7 Highfield, Workington, Cumberland. (May, 1899.)
- VAN DER OIJE, BARON CHARLES SCHIMMELPENNINGK ; Oosterland Manor, Oosterland, Isle of Duiveland, Zealand, Holland. (Sept., 1939.)
- VANE, E. N. T. ; Ridgeway, Joel Park Estate, Joel Street, Pinner, Middlesex. (March, 1937.)
- VENNING, H. C. ; Bramdean House, Alresford, Hants. (Jan., 1927.)
- VIERHELLER, GEO. P. ; St. Louis Zoological Park, St. Louis, Mo., U.S.A. (March, 1928.)
- VOY, MISS HILDA ; Oak Hall, Haslemere, Surrey. (Sept., 1936.)
- WALKER, MISS H. K. O. ; Chesham, Bury, Lancs. (Feb., 1895.)
- WALKER, PHILIP ; 19 Rochester Way, Blackheath, S.E. 3. (Aug., 1939.)
- WALLER, H. ; Kittsbury, 64 St. Julians Farm Road, West Norwood, S.E. 27.
- WARRE, MRS. PHILIP ; Coppid Hall, Stifford, Essex. (June, 1935.)
- WAUD, CAPT. L. REGINALD, F.Z.S., M.B.O.U. ; Bradley Court, Chieveley, near Newbury. (May, 1913.)
- WEBBER, LEONARD C. ; P.O. GM. RAN, Flinders Naval Depot, Crib Point, Victoria, Australia. (June, 1935.)
- *WEBER, ORLANDO F., JUNR. ; 22 East 82nd Street, New York, U.S.A. (Jan., 1937.)
- WENKE, FRANCIS L. ; 1103 Irving Street, Olean, N.Y., U.S.A. (Jan., 1942.)
- WESTON, CLIFFORD ; Hall Leys, Oadby, near Leicester. (Jan., 1938.)
- WHARTON-TIGAR, MRS. N., F.Z.S. ; 10 Chalcot Crescent, N.W. 1. (July, 1932.)
- WHITELEY, F. G. L. ; Heath Lodge, Knutsford, Cheshire. (March, 1939.)
- *WHITLEY, HERBERT, F.Z.S. ; Primley Hill, Paignton, S. Devon. (Sept., 1923.)
- WHITMORE, G. E. ; 168 High Street, West Bromwich, Birmingham. (July, 1935.)
- WILKINS, A. ; Rendcombe, Chesham, Bucks. (April, 1930.)
- WILLFORD, HENRY ; San Souci, Havenstreet, Ryde, Isle of Wight. (Nov., 1907.)
- WILLIAMS, SIDNEY, F.Z.S. ; 19 Beechdale, Winchmore Hill, N. 21. (Oct., 1905.)
- WILSON, ALEC M. ; Middlemoor, Presteigne, Radnorshire. (Oct., 1939.)
- WILSON, AND., F.Z.S. ; 233 Argyle Street, Glasgow, C. 2. (April, 1927.)

- WINTER, DWIGHT ; 800 East Ohio Street N.S., Pittsburgh, Pa., U.S.A. (1922.)
 WITTING, R. C. ; "The Gables," West Horsley, Surrey. (July, 1937.)
 WOOD, J. A. (Quantity Surveyor) ; 68½ Pitt Street, Sydney, N.S.W., Australia.
 (Oct., 1940.)
 WOOD, Mrs. MURIEL ; 8 Lambolle Road, N.W. 3. (July, 1927.)
 WOOLF, Dr. E. B. ; 6th Floor, Pasteur Chambers, Jeppe Street, Johannesburg,
 South Africa. (Oct., 1940.)
 WORKMAN, WILLIAM HUGHES, F.Z.S., M.B.O.U. ; Lismore, Windsor Avenue,
 Belfast. (May, 1903.)
 WORMALD, HUGH ; Newton House, Elm Ham, SO, Norfolk. (Rejoined.)
 YEALLAND, JOHN ; 1 Cemetery Road, Binstead, Isle of Wight. (July, 1934.)

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JONES, L. J. ; c/o E. C. Jones, Ltd., 174 Manchester Street, Ch. Ch.

JUST, A. W. ; 60 College Street West, Palmerston North.

KING, W. ; 11 Main Street, Gore.

LENNIE, Mrs. D. B. ; Mangorei Road, New Plymouth.

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McMULLIEN, Miss N. ; Awararua Street, Ngaio, Wellington.

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National Art Gallery and Dominion Museum, Rep. Dr. W. R. B. OLIVER ;
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Rules of the Avicultural Society

As amended, November, 1930.

1.—The name of the Society shall be THE AVICULTURAL SOCIETY, and its object shall be the study of Foreign and British Birds in freedom and in captivity. Poultry, Pigeons, and Canaries shall be outside the scope of the Society. The year of the Society, with that of each volume of the Society's Magazine, which shall be known as the AVICULTURAL MAGAZINE, shall commence with the month of January and end on the 31st December following.

2.—The Avicultural Society shall consist of Ordinary and Honorary Members, and the latter shall be restricted in number to six, and be elected by the Council.

3.—The Officers of the Society shall be elected, annually if necessary, by members of the Council in the manner hereinafter provided, and shall consist of a President, one or more Vice-Presidents, a Secretary, an Editor, a Treasurer, an Auditor, a Scrutineer, and a Council of eighteen members. The Secretary, Editor, and Treasurer shall be *ex officio* Members of the Council.

4.—New Members shall be proposed in writing, and the name and address of every person thus proposed, with the name of the Member proposing him shall be published in the next issue of the Magazine. Unless the candidate shall within two weeks after the publication of his name in the Magazine, be objected to by at least two Members, he shall be deemed to be duly elected. If five members shall lodge with the Secretary objections to any candidate he shall not be elected, but the signatures to the signed objections must be verified by the Scrutineer. If two or more Members shall object to any candidate the name of such candidate shall be brought before the Council at their next meeting, and the Council shall have power to elect or to disqualify him from election.

5.—Each Member shall pay an annual subscription of £1, to be due and payable in advance on the 1st of January in each year. New Members shall pay, in addition, an entrance fee of 10s. ; and, on payment of their entrance fee and subscription, they shall be entitled to receive all the numbers of the Society's Magazine for the current year.

6.—Members intending to resign their membership at the end of the current year of the Society are expected to give notice to the Secretary before the 1st of December, so that their names may not be included in the "List of Members", which shall be published annually in the January number of the Magazine.

7.—The Magazine of the Society shall be issued on or about the first day of every month, and forwarded, post free, *to all the Members who shall have paid their subscriptions for the year ; but no Magazine shall be sent or delivered to any Member until the annual subscription shall have reached the hands of the Business Secretary or the Publishers.* Members whose subscriptions shall not have been paid as above by the first day in November in any year shall cease to be Members of the Society, but may be readmitted, at the discretion of the Council, on payment of the annual subscription.

8.—The Secretary, Editor, and Treasurer shall be elected for a term of five years, and, should a vacancy occur, it may be temporarily filled up by the Executive Committee (see Rule 10). At the expiration of the term of five years in every case it shall be competent for the Council to nominate the same officer, or another Member, for a further term of five years, unless a second candidate be proposed by not less than twenty-five Members of at least two years' standing, as set forth below.

In the November number of the Magazine preceding the retirement from office of the Secretary, Editor, or Treasurer, the Council shall publish the names of those members whom they have nominated to fill the vacancies thus created ; and these members shall be deemed duly elected unless another candidate or candidates be proposed by not less than fifteen Members of at least two years' standing. Such proposal, duly seconded and containing the written consent of the nominee to serve, if elected, in the capacity for which he is proposed, must reach the Secretary on or before the 15th of November.

The Council shall also publish yearly in the November number of the Magazine the names of those members nominated by them for the posts of Auditor and Scrutineer respectively.

9.—The Members of the Council shall retire by rotation, two at the end of each year of the Society (unless a vacancy or vacancies shall occur otherwise) and two other Members of the Society shall be recommended by the Council to take the place of those retiring. The names of the two Members recommended shall be printed in the November number of the AVICULTURAL MAGAZINE. Should the Council's selection be objected to by fifteen or more Members, these shall have power to put forward two other candidates, whose names, together with the signatures of no less than fifteen Members proposing them, must reach the Hon. Secretary *by the 15th of November.* The names of the four candidates will then be printed on a voting paper and sent to each Member with the December number of the Magazine, and the result of the voting published in the January issue. Should no alternative candidates be put forward, in the manner and by the date above specified, the two candidates recommended by the Council shall be deemed to have been duly elected. In the event of an equality of votes the President shall have a casting vote.

If any Member of the Council does not attend a meeting for two years in succession the Council shall have power to elect another member in his place.

10.—Immediately after the election of the Council that body shall proceed to elect three from its Members (*ex officio* Members, not being eligible). These three, together with the Secretary, Treasurer, and Editor, shall form a Committee known as the Executive Committee. Members of the Council shall be asked every

year (whether there has been an election of that body or not) if they wish to stand for the Executive, and in any year when the number of candidates exceeds three there shall be an election of the Executive.

The duties of the Executive Committee shall be as follows :—

(i) To sanction all payments to be made on behalf of the Society.

(ii) In the event of the resignation of any of the officers during the Society's year, to fill temporarily the vacancy until the end of the year. In the case of the office being one which is held for more than one year (e.g. Secretary, Editor, or Treasurer) the appointment shall be confirmed by the Council at its next meeting.

(iii) To act for the Council in the decision of any other matter that may arise in connection with the business of the Society.

The decision of any matter by the Executive to be settled by a simple majority (five to form a quorum). In the event of a tie on any question, such question shall be forthwith submitted by letter to the Council for their decision.

The Executive shall not have power

(i) To add to or alter the Rules ;

(ii) To expel any Member ;

(iii) To re-elect the Secretary, Editor, or Treasurer for a second term of office.

It shall not be lawful for the Treasurer to pay any account unless such account be duly initialed by another Member of the Executive.

It shall be lawful for the Secretary or Editor to pledge the Society's credit for a sum not exceeding £50.

Should a Member wish any matter to be brought before the *Council* direct such matter should be sent to the Secretary with a letter stating that it is to be brought before the Council at their next meeting, otherwise communications will in the first place be brought before the Executive.

A decision of a majority of the Council, or a majority of the Executive endorsed by the Council, shall be final and conclusive in all matters.

11.—The Editor shall have an absolute discretion as to what matter shall be published in the Magazine (subject to the control of the Executive Committee). The Secretary and Editor shall respectively refer all matters of doubt and difficulty to the Executive Committee.

12.—The Council (but not a committee of the Council) shall have power to alter and add to the Rules, from time to time, in any manner they may think fit. Five to form a quorum at any meeting of the Council.

13.—The Council shall have power to expel any Member from the Society at any time without assigning any reason.

14.—Neither the office of Scrutineer nor that of Auditor shall be held for two consecutive years by the same person.

15.—The Scrutineer shall not reveal to any person how any Member shall have voted.

The Society's Medal

RULES

The Medal may be awarded at the discretion of the Committee to any Member who shall succeed in breeding, in the United Kingdom, any species of bird which shall not be known to have been previously bred in captivity in Great Britain or Ireland. Any Member wishing to obtain the Medal must send a detailed account for publication in the Magazine within about eight weeks from the date of hatching of the young, and furnish such evidence of the facts as the Executive Committee may require. The Medal will be awarded only in cases where the young shall live to be old enough to feed themselves, and to be wholly independent of their parents. No medal can be given for the breeding of hybrids, or of local races or sub-species of species that have already been bred.

The account of the breeding must be reasonably full so as to afford instruction to our Members, and must appear in the AVICULTURAL MAGAZINE before it is published or notified elsewhere. It should describe the plumage of the young, and *be of value as a permanent record of the nesting and general habits of the species*. These points will have great weight when the question of awarding the Medal is under consideration.

In every case the decision of the Committee shall be final.

The Medal will be forwarded to each Member as soon after it shall have been awarded as possible.

The Medal is struck in bronze (but the Committee reserve the right to issue it in *silver* in very special cases) and measures $2\frac{1}{2}$ inches in diameter. It bears on the obverse a representation of two birds with a nest containing eggs, and the words "The Avicultural Society—founded 1894". On the reverse is the following inscription: "Awarded to [*name of recipient*] for rearing the young of [*name of species*], a species not previously bred in captivity in the United Kingdom."

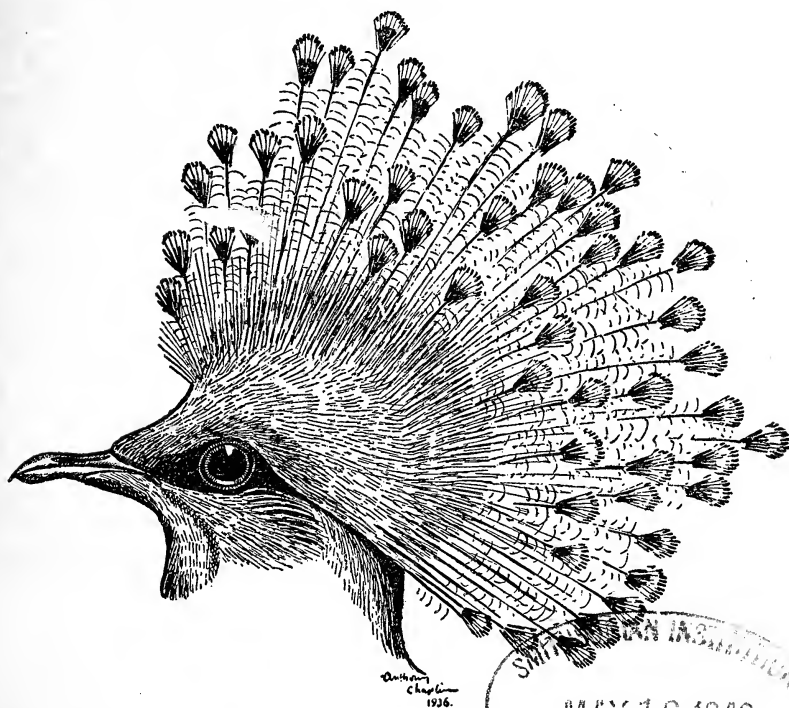
The Council may grant a special medal to any member who shall succeed in breeding any species of bird that has not previously been bred in captivity in Europe.

The Treasurer begs to remind all members *who have not already paid*, that subscriptions (£ 1) became due on 1st January, 1943. She would be very glad if members would kindly remit as soon as possible, and without further notice, to her :—Miss E. Maud Knobel, Lindeth Lodge, Peaslake, Surrey.

Cheques should be made payable to the
“ Avicultural Society ”.

200

AVICULTURAL MAGAZINE



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THE AVICULTURAL SOCIETY

Founded 1894

PRESIDENT : A. EZRA, Esq., O.B.E.

MEMBERSHIP SUBSCRIPTION is £1 per annum, due on 1st January each year, and payable in advance. (Entrance fee 10/—, suspended during the War.)

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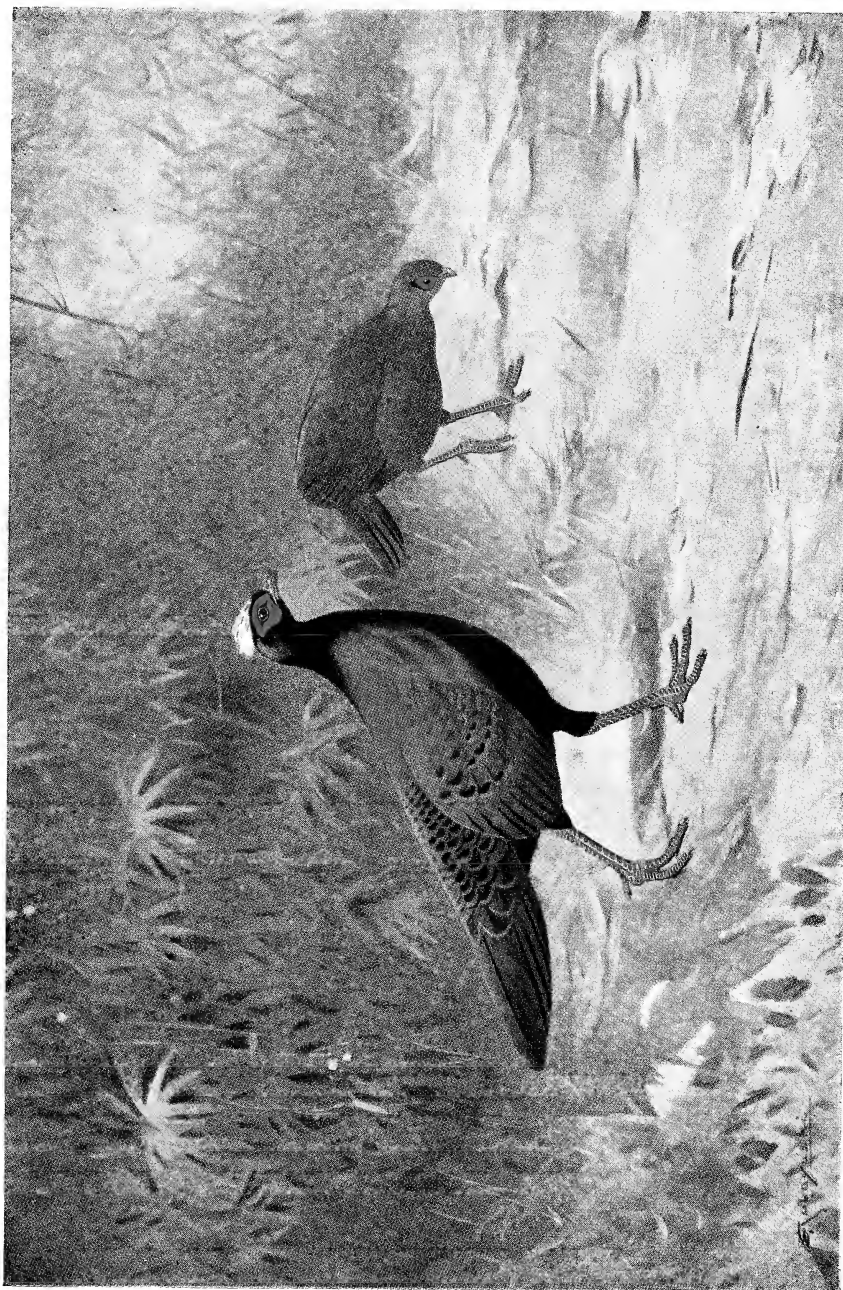
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AVICULTURAL MAGAZINE

THE JOURNAL OF THE
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JAN.-FEB., 1943

EDWARDS' PHEASANT

By J. DELACOUR

During an already long life devoted to a great extent to aviculture—I started at 15—I have imported, either by myself or through private collectors, a large number of species which had never before reached Europe in the live state. Numerous birds, among them, have been established and bred successfully in captivity since, particularly game birds and waterfowl, but perhaps none has been more satisfactory than the lovely Pheasant figured here.

Up to 1924 Edwards' Pheasant was considered the rarest species of the whole family. Four skins in the Paris Museum represented the only specimens ever found so far. They had been collected in Central Annam by Father Renaud, a French Missionary, and described by Oustalet in 1890.

In 1923-4, on my first expedition to Indochina, I had made it a special point to collect some of these birds alive and as a result I brought home three pairs as well as several odd cocks, which I later presented to the principal zoos of Europe and America. Incidentally, one of them is still alive at the Philadelphia Zoo, while the specimen I gave to the New York Zoological Park died only quite recently.

The three pairs kept at Clères nested in 1925, eight young being reared that year. Ever since they have bred regularly, and have been distributed all over the world, only a few pairs, which I imported later on, providing a change of blood. The species proved so prolific and hardy that it is now quite widespread in American aviaries, as it was in Europe at the beginning of this war. It is gratifying to note this happy state of affairs, as Edwards' Pheasant is a very rare bird in its restricted native area. It only occurs on the damp, heavily forested eastern slopes of the mountains in Central Annam, and its whole range does not extend over more than 200 miles in length and 40 miles in width.

As shown on the accompanying plate the Edwards' Pheasant is a very pretty bird, of an unusually small size, hardly exceeding that of the Golden. Contrary to all other Kalijis, to which it is closely related, the males take their bright plumage in their first year, and

the period of incubation of the eggs is only twenty-one days, instead of twenty-five as with other species.

Its nearest relative is the still rarer Imperial Pheasant, which I discovered just north of the range of Edwards'. Recently the Marquess Hachisuka has created for these two birds the genus *Delacourigallus* (*Zoologica*, vol. 26, part 18, 8th September, 1941), stressing the points of resemblance and difference between them and Swinhoe's Pheasant (*Hierophasis*) on one side, and Bulwer's Pheasant (*Lobiophasis*) on the other.

It is greatly to be hoped that the war will not too greatly reduce the breeding stock of this attractive and uncommon bird, which has proved such a welcome and attractive acquisition of the last twenty years.

* * *

THE BLACK-CRESTED FINCH

A LITTLE MORE ABOUT *Lophospingus pusillus*, AND OTHERS

By H. C. MARTIN

I have a great partiality for this quaintly elegant little Finch, of which quite a number came into the hands of several dealers in the Spring of 1938, and at different times in that year I acquired four, a cock and three hens. One only still survives in my small outdoor, but suitably sheltered, lean-to aviary, where she has lived in the best of health and plumage through the past three severe winters (not to mention the concussion of all too many bombings and much gunfire in the near—very near—neighbourhood) and where I believe the others still would have been but for some of those unhappy accidents which will happen, but which ought not to happen, to the careful aviculturist. Firstly, one sad day in May, 1940, a little falling door failed to close, unnoticed, alas, until too late, whereby several of my cherished South American favourites took a doubtfully happy liberty; first and foremost a very lovely White-capped Tanager. I learned later to my chagrin that he lived about the district for at least a month or two and was seen and marvelled at by not far distant residents, for he was very tame and might easily have been trapped had I not given him up in despair and annoyance at my negligence: but something distracted me and when I returned none of the fugitives was to be seen. One of the hen Black-crests and a fine male Pileated Finch, her congener and near relative, were lost at the same time.

Disaster No. 2 was the introduction of a "Rock-Sparrow", purchased in pitiful shape, and out of pity, in a small bird-shop and carefully nursed back to health and beauty in a cage, but which in the aviary proved to be a very Hun, an assassin, a scalper of all and sundry not stronger than himself, repaying the care bestowed on him

by ruthlessly braining one morning the gentle and unoffending male *Lophospingus*. Beware of Sparrows and all their kind, with few exceptions, say I, unless it be in company with more masterful species : and yet in some ways they are very attractive. A pretty bird he was, the scoundrel, with his warm browns, greys, and white, and his saucily uplifted cap, always lively and repeating throughout the day his two- or three-note song, if one can so call it, clear and loud, but somewhat mournful. Authority suggested to me, not wholly for his sins, to turn him loose, it being springtime and because furthermore I believe that stragglers of his species have been met with in Britain. But would he go away ? Not he ! Two mornings later his wistful call was still sounding from some big trees near by and when I with my wife paid a morning visit to the aviary down he came, sidling along the garden fence and saying as plainly as small birds can say, " Oh ! do let me in." The way that intelligent scamp ranged over the wiring in search of an entrance was really surprising, and, when at length I opened a hinged emergency panel, in he popped at once, to be eventually interned in solitary durance. Would that the White-cap had felt like that ! Fortunately a friend later took a fancy to him and (duly warned) bore him away—in a box on his bicycle.

Thus I lost my male Black-crest, and my hopes of breeding the species, though the little hens went to nest in a chip fruit punnet—an article which, half closed in with a patch of wire meshing or with wood strips and tacked on to a small piece of board, makes a cheap and acceptable nesting-place for many small birds, in default of a natural one : when a bird really wants to build, a truly natural site is by no means essential. The recognized clutch of two eggs only was assiduously, if hopelessly, incubated and I am confident that in a peaceful aviary, even quite small were it devoted to them alone, these docile little birds would breed without difficulty ; perhaps even without a regular supply of insect food, for they keep in perfect health on nothing but dry seed, though having access to my one remaining White-capped Tanager's bowl of egg and cake or biscuit mixture, besides green food of some kind, lettuce, garden weeds, or flowering grass. But insectivorous of course they largely are and keen enough on the now priceless mealworm, smooth caterpillars, spiders, or small moths. By way of experiment I fastened up in the aviary a small container of perforated zinc enclosing a piece of sponge soaked in a mixture such as the zealous entomologist uses for " sugaring " elusive *Noctuæ*, in the hopes that this would attract minor moths and other insects. But I do not think it was a great success, possibly because flying night creatures did not freely pass through small wire meshing.

Speaking of this bird's food I might mention that I lost my second hen through, I fear, a temporary war-time impossibility of obtaining

a supply of either millet or canary seed, for I found her dead one morning, apparently through eating something unsuitable. Why don't we grow some at least of our canary seed here in England? I have tried this year experimentally and obtained quite a fair yield, some thirty seeds or more from each "ear", and, unlike millet, it seems to mature quite well.

But to revert to the natural history of *Lophospingus*: On the occasion of the Ornithological Congress over in France in May, 1938, which it was my good fortune to attend, I had the pleasure of making the acquaintance of the delegate from Uruguay, my home for many years, Professor A. Teisseire, with whom I have since corresponded occasionally. At the time I had the idea that this bird was quite a new discovery, hitherto unknown to the dealer fraternity over here at least, and perhaps this latter impression was correct: much interested in it, it thus occurred to me to inquire of this friend, in view of his scientific relations out there, whether he could procure me any local data as to its habitat and habits. Not specializing himself in ornithology he kindly consulted a colleague, the Director of the Natural History Museum at Montevideo, who was good enough to write to me, sending me the information which I repeat below—and which may be appreciated by those of our members who bought the bird four years ago—about the "Cardenal de cabeza negra de la Argentina y Paraguay", as it is called by Argentine naturalists, the "Cardenillo" of the Buenos Aires and Montevideo dealers. It will be seen that it was named and described by Burmeister already in 1860.

From "*El Hornero*", vol. 1, B. Aires, 1917-18, quoting that naturalist's *Journal für Ornithologie* (dated in 1860) which translated reads as follows:—

Burmeister's *Gubernatrix pusilla* or *Lophospingus pusillus*

The bird is common in all the Northern Provinces and inhabits dry situations amongst woods of sparse vegetation. Sometimes it seeks its food in the sandy soil and this usually consists of small seeds. Also they are accustomed to flock together in little bands, especially after the breeding season. They are sedentary and nest in all the Provinces of the north-east of the country.

Mr. P. Girard says that the nest is hemispherical in form and that it is built upon a cactus. Externally it is formed of lichens and spiders' webs interlaced with vegetable fibres and finished internally with still finer tissues, hair and a few feathers. It measures 7 by 5 centimetres.

The eggs are of dark bluish white with a few specks of pale violet grey, larger spots being met with at the obtuse end: they are produced in November and December. (Early summer of course.)

The description of the egg does not tally greatly with either of those given in the AVICULTURAL MAGAZINE in October, 1938, and October, 1939, but egg coloration is a very variable thing, perhaps partly affected by circumstances, and difficult to depict in words: the eggs laid by my birds were rather like a Common Sparrow's, with very small spots.

From Professor A. Wetmore's "Observations on the Birds of Argentina, Paraguay, etc." :—

Lophospingus pusillus (Burmeister)

At Laguna Wall, 200 kilometres west of Puerto Piñasco, Paraguay, on 25th September, 1920, I found a pair of these little Crested Finches feeding on the ground at the border of a thicket of viñal (creeping vine) and secured a female. The birds flew with quickly tilting flight, with a prominent display of the white tail markings. Near Tapia, Tucuman, on 11th April, 1921, I secured another near a large barranca (ravine) in a tract of low brush grown with weeds, where it was on the ground with a mixed flock of *Brachyspiza* and *Saltatricula*. The species has been recorded from Cordoba, Tucuman, Salta, and Jujuy, so that its occurrence in Western Paraguay is not astonishing. The female shows a black throat patch of irregular form and smaller size than in the male. In the *Ibis* for 1880 a female taken in Tucuman by Durnford is figured with the throat white.

The remark about an irregular throat patch in the female is not perhaps well founded : could it have been an immature male ? I have just looked once more at my remaining hen, which cannot be less than four years old, and she is distinctly white beneath the mandible, without any patch, but showing only a faint dark streak running obliquely downwards from each corner of it and vaguely joining below in a curve across the breast.

My male bird of unhappy memory, and which I tried in vain to replace, had a clearly defined throat patch of smoke black, while the other parts of his plumage which in the hen are of a blackish brown were likewise of a full black. His slender wavy crest appeared longer than in the female and of a decided black. The sexes seen together can in fact not be confounded.

Last year I collected the tail feathers moulted by my last remaining bird : it seems there are sixteen of them, six being broad, quite black with bold graduating white markings at the end, and the rest narrow and white down edge and sides. But curiously, and short of catching the bird to examine it, I cannot put these together correctly, though the effect when the tail is spread is striking. I wish I had kept the skin of the one that died, in order to better study the plumage. Nature made this little Finch dull and otherwise inconspicuous, like many dwellers in arid places : what a pretty cage bird would it be did it possess some of the vivid colouring of the larger Cardinals, to which in my view it is closely akin, if not actually one of them.

Thus I now know with certainty where the Black-crests come from, namely the hot, dry northern parts of Argentina and from Paraguay, and likewise something of their way of life in the wild. Shall we ever see them, and many others, over here again ? Not, I should think, for some years to come, though I should always wish to possess a couple so long as I may be able to keep a few selected pets of kinds, like the White-caps, too, which seem particularly adapted to and happy in captivity. But far be it from me to wish to see again too much trading in beautiful foreign species, so many individuals of which were formerly fated to die all too soon in our raw climate and in

inexpert or careless hands. This terrible war has brought dire misfortune on the world, but one hopes that, when it is all over, lasting good may come for mankind out of evil, and even also for the birds, by continued restriction, as well as control, of importations, the present cessation of which cannot but mean a kind of automatic protection in their own country of many species which were being too heavily exploited. As they say in South America, "No hay mal que por bien no venga," there is no ill which does not make for good.

* * *

LONG-LIVED HUMMING BIRDS

By ALFRED EZRA

Many members of the Society will be sorry to hear of the death of a very old friend, my Garnet-throated Humming Bird (*Eulampis jugularis*). I got this beautiful bird in October, 1934, when she was an adult bird, and she died on the 11th November, 1942. Over eight years is, I am sure, a record for a Humming Bird in captivity. Most bird lovers have seen her at Foxwarren, and at shows where she always won. She was kept in my bedroom, and was given her liberty several times a day, when she flew about and only went back into her cage when she had had enough. The food was always the same mixture of Mellin's food, Nestle's milk, and honey, given fresh and never allowed to remain in the cage to turn sour. She always loved her bath, and jumped into it the moment it was put into her cage. I never gave her any live food all the time she was with me, but sometimes she used to catch mosquitoes, when flying about the room, and swallow them. She was never ill in her life, and every year moulted out perfectly into her beautiful plumage. I shall miss her very much as she was a great pet. Most Humming Birds are delightful to keep in captivity, and I always found them most interesting and intelligent and so easy to keep.

They must have a good deal of exercise, and should be kept very clean, and the food should be given absolutely fresh, and never allowed to become sour.

Another beautiful Humming Bird I was very fond of was a Waterton's Wood Nymph (*Thalurania watertoni*), which I kept in perfect health for a long time, and only lost him by stupidly letting him out of a window. This bird was the most fearless one I had ever kept, and used to fly and skim over my bath when I was in it, and fly out again like a Swallow. When let out of his cage he flew about at a terrific pace, and rushed back into the cage without ever settling on anything in the room. If I held his little bath in my hand he would at once fly out of his cage, and wash himself in this without being the least bit frightened. I could have cried when I let him out, and was very

thankful I did the stupid thing and no one else. I am now left with only one Humming Bird, the Violet-eared (*Petasophæa iolata*), which I have had for nearly five years, and it may be the only one in England now. How I long to have some more of these exquisite birds again.

* * *

SOME GLIMPSES OF THE BIRDS OF CEYLON

By Major ALAN LENDON, A.A.M.C.

My return from the Middle East to Australia, in 1942, was interrupted by a sojourn of some three and a half months, from the end of March to the middle of July, in Ceylon. During that time I was stationed in Colombo, and apart from two brief trips to the Galle district and two short spells up-country my observations on bird life were practically all made in the Colombo area. Quite the commonest bird in the vicinity of Colombo is the Ceylon House Crow (*Corvus splendens protegatus*) and one soon becomes accustomed to the constant cawing which lasts through the hours of daylight, but which at first is quite irritating by its persistency. About the time I left Ceylon, fledgelings of this species were numerous. This bird seems to be replaced away from the coastal areas by the Black Crow (*C. coronoides culminatus*), a larger bird without the grey markings of the first-named species. Next to the Crow, probably the commonest bird around Colombo and, indeed, in all parts of the Island that I visited, is the Magpie Robin or Dyal Bird (*Copsychus saularis ceylonensis*), a bird fairly well known in captivity in Europe, and possessing some pretty notes. The females and young birds are grey and white, not black and white like the males. Almost as frequently seen around Colombo is the Black Robin (*Saxicoloides fulicata fulicata*), an attractive and tame little bird. The cocks are a glistening black with rufous undertail coverts and a patch of white on the wing which only shows in flight, while the hens are brownish with the same rufous subcaudals. The Common Babbler (*Turdoides griseus striatus*) is also a plentiful bird around Colombo, is seen in small flocks, and is extremely noisy. Ceylon possesses a number of species of Babblers, but the only other one I saw was the Scimitar Babbler (*Pomatorhinus horsfieldi melanurus*), of which I saw a small flock on a tea estate; they reminded me very much of our common Australian species to which they must be very closely allied. The Indian Tailor Bird (*Orthotomus sutorius sutorius*) is common in the gardens around the town, and is easily identified with its reddish cap and greenish back; I was not lucky enough to discover a nest. The Common Ceylon Myna (*Acridotheres tristis melanosternus*) is plentiful, and is, I think, the same bird that has been introduced into many parts of Australia. The only Bulbul that I

managed to identify was the Red-vented (*Molpastes haemorrhous haemorrhous*), they were fairly plentiful all around the town. I was very struck by the Crow Pheasant or Jungle Crow (*Centropus sinensis parroti*), a large black bird with bright tan-coloured wings and a brilliant red eye ; they are frequently seen in the gardens, and appear to be ground feeders. Far more often heard than seen is the Indian Koel (*Eudynamys scolopaceus scolopaceus*), a Cuckoo which lays its eggs in Crow's nests. The cocks are glossy black and the hens mottled brown and white, and yet strangely enough the young resemble the males. Common everywhere, particularly in the paddy fields, but also in the vicinity of towns, is the lovely White-breasted Kingfisher (*Halcyon smyrnensis generosa*) which has several loud notes. I saw this bird emerging from nesting burrows on the roadsides on several occasions. A closely allied, if not identical species, from Malaya has been exhibited in the Adelaide Zoo. I only saw the Ceylon Kingfisher (*Alcedo atthis taprobana*) on two occasions. The Brahminy Kite (*Haliastur indus indus*) was the only bird of prey that I saw, a few were always to be seen in the vicinity of Colombo harbour. On my last morning in Ceylon I was lucky enough to see a fine specimen of the Red-backed Woodpecker (*Brachypternus aurantius erythronotus*), I had been told that they were not infrequently to be seen around Colombo. I wonder if this species has ever been kept in captivity? The Rose-winged Parrakeet (*Psittacula torquata*) is frequently to be seen and heard in the vicinity of the town, but I did not identify any of the other members of this genus in the wild state, although I saw the Ceylon Hanging Parrot (*Coryllis indicus*) on several occasions. A few of them were exhibited in the Zoo, but I was told that they were not very long-lived in captivity. The only Swallow that I was able to identify was the Ceylon Swallow (*Hirundo daurica hyperythra*), very strikingly marked with chestnut on the under parts. Sunbirds were not uncommon in the gardens around the town, but the only species I identified with absolute certainty was the Purple-rumped (*Cyrtostomus zeylonicus*) of which I got a very good look at a fine cock bird. I think the above covers most of the birds seen in Colombo itself.

Commonly seen in the low-country is the White-vented Drongo (*Dicrurus caerulescens leucopygialis*) a striking bird, easily identified by its forked tail and almost always seen in pairs. I saw several examples of the Ceylon Green Barbet (*Thereiceryx zeylonicus zeylonicus*) in different parts of the low country ; they have very loud, distinctive notes ; I also saw a specimen of the little Crimson-breasted Barbet (*Xantholaema haemacephala indica*) in captivity. The commonest bird of the paddy fields is the Indian Pond Heron (*Ardeola grayii*), usually called the "Paddy-bird". I also saw some small white Egrets, but I do not know the species. The White-breasted Waterhen (*Amaurornis phoenicura phoenicura*) is often to be seen in the neighbourhood of water,

and is an unusual-looking species. In the Galle district I saw quite a number of Bee-eaters which I think were the Common Green Bee-eater (*Merops orientalis orientalis*). In the same area I also saw two examples of the Indian Black-headed Oriole (*Oriolus luteolus luteolus*), a very striking black and yellow bird. Once again a Malayan bird closely resembling this species has been exhibited in the Adelaide Zoo. Other birds seen in this district and not elsewhere were the Black-headed Cuckoo-Shrike (*Lalage skyesii*) and the Spotted Dove (*Streptopelia chinensis ceylonensis*).

Now for birds seen only in the hill-country. On the golf links at Nuwara Eliya I saw the Pied Bush Chat (*Saxicola caprata atrata*), an attractive little bird which must be closely allied to the Stonechats, which were plentiful in Palestine last January and February. In the same locality I saw a number of examples of the Grey Tit (*Parus major mahrattarum*), not very unlike the Great Tit of Europe. The Common Pipit (*Anthus richardi rufulus*) was also frequently to be seen there, and I saw a single specimen of the Ceylon Blackbird (*Turdus merula kinnisii*). In the famous Peradeniya Botanical Gardens, near Kandy, I caught a glimpse of the Paradise Flycatcher (*Tchitrea paradisi paradisi*) ; unfortunately it was almost dusk, and I was not lucky enough to get a very good look at him. In the same place and also elsewhere up-country I saw the Ceylon White-browed Fantail Flycatcher (*Rhipidura aureola compressirostris*), an attractive little bird very like the Australian Willie Wagtail in habits and coloration. The Large Ceylon White-eye (*Zosterops ceylonensis*) was fairly plentiful on the tea estate near Talawakelle, where I spent a couple of days. I have purposely left till the last the loveliest bird that I saw on the Island. It is the Orange Minivet (*Pericrocotus speciosus flammeus*) of which I was lucky enough to see quite a number on the above-mentioned estate. They were always in pairs or small family parties, and the black and orange males and grey and yellow females and young made a never-to-be-forgotten sight. I think they are one of the most attractive birds I have ever seen. I wonder if they have often been kept in captivity?

Aviculture in Ceylon seems to be very limited. Dr. Osman Hill has a fine collection of Parrots, Cockatoos, and Lorikeets, which I hope he will some day describe for the Magazine in detail. Mr. Frank Loos, of Colombo, has an interesting collection, and when I saw his birds early in July, a young Madagascar Weaver had just left the nest. I am wondering if this species has frequently been bred in captivity? I was told that a Mr. Wilson, who lives up-country, also has a nice collection, but that appears to be about the lot. The Zoo, which is about six miles out of Colombo, has some very interesting exhibits which I have not space to describe, perhaps Dr. Hill or Miss Yvonne Burn could be persuaded to describe the birds here for the Magazine?

I found Cicely Kershaw's little book, *Familiar Birds of Ceylon*, very helpful in identifying unfamiliar species ; it has remarkably good identification tables which I would commend to other writers of similar handbooks on birds.

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FURTHER NOTES ON BIRDS SEEN ON THE GOLD COAST

By D. H. S. RISDEN

My last article on Gold Coast birds dealt mainly with species with which we are all familiar at home. The following notes concern the less familiar kinds, in fact many of them have probably never been imported except by the experts who bring home a few species at a time for the aviculturist with a long purse.

I should add that I am now back in this country and these descriptions are from my diary kept at the time and added to from memory.

The Fiscal Shrike was prominent everywhere. Its size and general shape reminded me very strongly of a Scarlet Minevet. Its colouring is mainly black above and white below with some white in the wings. It has the large head, short wings, and long tail characteristic of Minevets and its little short legs make it very awkward when on the ground.

The sexes appeared to be identical, but the young in nest-feather had the black areas replaced by grey. They always appeared in pairs and seemed to spend their time sitting on prominent dead twigs or telegraph wires whence they would pounce on grasshoppers which were usually carried back to their perch before being eaten.

Although there are numerous species of Shrikes represented on the Coast I never saw evidence of the English Butcher Bird's habit of spiking their prey on thorns.

One of the finest singers was the Black-crowned Tchagra. This again is a relative of the Shrikes and at first glance reminds one of the English Butcher Bird with perhaps a shade longer beak. He has a chestnut back and wings, pale grey underparts, and a black cap with a black streak running through each eye. The song is a delightfully mellow whistle starting high up the scale and gradually descending. The bird is somewhat of a ventriloquist as I had often heard this sweet song before and, although I knew the bird well by sight, it was some time before I associated the two.

They were usually seen singly or in pairs about the gardens or in the bush near by. Occasionally I saw presumably two cocks singing at each other on the ground about one foot apart with bowed heads

and fanned out tails and slowly manœuvring round each other. It was then that the song sounded particularly fine.

West African Coucals were common, and either very tame or simply too lazy to fly away until you were within a dozen yards of them. Then all they did was to flap heavily into perhaps a low tree or else land a little further off.

About 18 inches long including a rather long racket-shaped tail they resemble a giant Shrike in general shape. Briefly their colouring is chestnut back and wings, black head, pale grey underparts, and black tail. Their local name of "Fool bird" seems to fit rather well when you hear their call which is a sort of "Cuckoo" in about six notes running down the scale.

Nearly all their time is spent on the ground, where they walk and hop lazily about searching for grasshoppers and, no doubt, small lizards, if they are ever quick enough to catch them. They were always seen in pairs and were pretty evenly distributed about the cultivated areas as well as the bush itself.

The so-called Rock Sparrow takes the place of the English House Sparrow. I occasionally used to see an odd specimen among consignments of imported Senegal Finches before the war, and often wondered why anyone bothered to catch such an obviously sparrow-like bird and send it to England.

Slightly slimmer and more elegant in build, it can best be described as a House Sparrow with a plain grey head and no black bib. The sexes are identical.

Some pairs lived up to their name as I did see them nesting in holes and crannies in rocky cliffs here and there, but, with the advent of the European bungalow I think they have changed their habits and most of them prefer the asbestos or corrugated iron eaves of the white man's house.

Their chirp is exactly like that of their English cousin and many a morning was I woken up by their incessant squabbling outside my window for corn scattered from the Parrots' cages. The young when first fledged are coloured like their parents—perhaps a shade paler. In this and the similarity between the sexes they differ from the English bird.

One would naturally expect to see Vultures in the tropics, and I was not disappointed. The species commonly seen was the Hooded—a small kind as vultures go.

They haunted the vicinity of the cookhouses as well as the native villages, ever on the lookout for something to eat. Being unmolested even by the black people they allowed one to approach within a few yards. I must confess, however, that I think they look their best at a distance when soaring high over the town, swinging round and round in huge circles with scarcely a wing beat against the blue sky.

For a few weeks I had under observation a pair of a larger species—I think the Northern Lappet faced. These were flying to and from a nest they had in a tall cottonwood tree ; but, after a time, they ceased to appear although the nest remained. This was the only time I saw a species other than the Hooded.

The Pied Crow really takes the place of the Carrion Crow in England. Slightly larger than the Carrion he is much handsomer, being glossy black with a pure white breast, the white spreading right round his neck in a broad band. In every other respect he resembles the Carrion Crow. He is nearly always seen in pairs and is always on the look out for something edible, which may be anything from offal to newly-hatched chickens.

Incidentally I never knew a Vulture attempt to catch a live chick.

Buff-backed Herons, locally known as "Tick Birds", arrived on the coast from the interior in November and stayed with us right through the dry season till April, when they all disappeared, presumably for their breeding grounds.

They look just like the cattle Egrets, a flock of which used to be at liberty at Whipsnade, being white with yellow beaks and black legs. They derive their name from a faint pinkish buff shade which can be seen on their backs when one is at close quarters.

They were quite tame and allowed one to approach within 20 feet of them. They appeared to feed principally on grasshoppers which they stalked through the rough grass, stopping dead still and "pointing" at their prey before seizing it. It was interesting to watch a party of them stalking abreast, separated from each other by a yard or so. It was obviously an organized "drive" and every time a grasshopper was "put up" one member of the party was sure to get it.

At night they liked to congregate at some pond or other where they appeared to roost on the banks. I had always looked on these birds as waders, but though I watched carefully I never saw them go near water at any other time, nor did they ever wade or catch any food from the water.

They are very graceful and elegant birds and should make delightful aviary inmates.

Common West African Bee-eaters arrived in flocks in December and stayed till April. They are about the size of the European species, but their colouring struck me as not quite so brilliant. They were chiefly seen on the roadway itself or the neighbouring telegraph wires whence they hawked flies.

Why they should like to sit thus in the middle of the roadway was a bit of a mystery as there did not appear to be any more insect life there than in the surrounding bush, but I noticed exactly the same habit at night with the Nightjars of which more anon. Possibly the

reflected heat from the road pleased them. When motoring they could be seen for mile after mile flying up just ahead of one's front wheels.

The Little Bee-eater, as its name implies, is a diminutive replica of the one above, being about as big as a Spotted Flycatcher and having the same habit of perching on some low twig whence it would dart out, catch an insect, and return to the same perch.

Whereas the Common Bee-eater was seen in flocks all over the roadways, the Little Bee-eater was usually in pairs and kept off the beaten track.

I have never seen so many Nightjars as there are on the Coast. There are several species, but I only saw the common one which is identical with the British bird—perhaps a bit smaller. As previously mentioned, they would sit all over the road at night, and when one was driving their eyes would shine in the car lights like live coals.

They appeared to be dazzled by the head lamps (the black-out was not so stringent there then as it is over here), and were in imminent danger of being run down.

One night one got drawn in by the rush of air through the side window and I was able to examine it at leisure before releasing it and notice the beautiful large dark eyes and the enormous gape surrounded with bristles.

The call note was exactly like the noise made by a stone when bounced across the ice of a frozen pond.

The Garden Bulbul was well to the fore as a songster, but not a very sweet one. A typical Bulbul in shape and size it is plain brown all over with a slightly darker head. It has a habit of raising the head feathers in the same way as a Chaffinch will, thus giving an impression of a slight crest.

It has a cheery loud song, rather reminiscent of that of the Golden-fronted Fruitsucker, and was the first bird one heard at dawn. These birds were always seen singly or in pairs, usually searching the foliage of shrubs for insects. They frequented the gardens and cultivated districts. In fact I do not remember seeing one in the bush.

The Allied Hornbill was often seen in parties of three or four, usually among the palm trees at the fringe of the bush. This is a small species about the size of a Crow and is a typical Hornbill in shape and colouring, being black and white with a large yellow beak.

They are shy birds and seldom allowed me to approach anywhere near them. When flying across a clearing, one after another, as was their habit, their flight appeared weak and slow like that of the British Jay when it has to fly any distance.

These birds have a peculiar high pitched querulous call repeated several times.

Yellow Wagtails appeared in December, but were not seen after

a month or so. I think they must have been on migration although this part of West Africa is rather off the beaten track for migrants.

Pied Kingfishers were often seen wherever there was a sheet of water of any size. They preferred the lagoons near the sea and have a novel way of fishing. Poised some 30 or 40 feet above the water one would hover like a Kestrel and one could plainly see the long black beak pointing downwards at right angles to the body.

When a fish was spotted the bird plunged straight into the water after it. Occasionally one would check its headlong plunge and hover again a few feet over the surface, presumably because the prey had vanished.

This bird is about three times the size of its English cousin and, as its name denotes, entirely black and white in colour.

The Pigmy Kingfisher is, I should think, the dwarf of the family. In size about that of a Red-faced Lovebird it is coloured like the English species but with a bright red beak. It was fairly evenly distributed throughout the scrub country and was usually seen singly or in pairs, sitting either on telegraph wires or a prominent bare twig, often quite near the ground.

As I frequently saw it far from water I concluded it was a "land" species which probably fed on grasshoppers and other insects.

When visiting a friend one day I was delighted to find among his poultry a tame hand-reared pair of Hartlaub's Duck. They ran loose with the Muscovy Ducks with whom they shared a small concrete pond. Being full-winged I was surprised to hear that they never strayed far.

As I believe these are rather rare in British collections here is a brief description (from memory) : Size about that of a Wigeon ; general colouring dark chestnut with black head, blue wing bars, and blue bill.

At one time I had hopes of bringing this pair back with me, but repeated attacks of malaria resulted in my being "boarded" home by the M.O. rather suddenly, which wrecked all plans of this nature.

West African Harriers were fine handsome birds often seen and always in pairs. About the size of a Kite they had long thin yellow legs, rather long tails, and rounded wings. The general colour was French grey with darker markings on flights and tail and red skin round the eyes. They were capable of raising the head feathers which gave the appearance of a slight crest.

I usually saw them quartering the edges of the palm forests with slowly beating wings, every now and then diving into the depths of the palm fronds presumably in search of food. The natives assured me they were after the red palm fruit which struck me as a bit far fetched for birds of prey ! They certainly never attacked domestic poultry any more than the Black Kites, which used to congregate wherever the vultures did, on the look out for offal.

The name is a misnomer as these Kites are dark brown. They appeared to be migratory as I only saw them during the dry season, from about December to April.

On several occasions I had the good fortune to see a Barbary Shrike. Near where we were living was a large area of dense scrub which surrounded a salt water lagoon. Man-made ditches and native footpaths criss-crossed in and out of this region and enabled one to penetrate quite deeply.

It was here that I did a lot of my bird watching and occasionally had a glimpse of this beautiful Shrike as it flitted across an opening in the bushes. From coloured illustrations I know that the bird is scarlet below and black above with a golden crown, but it was very shy and I never saw more than a flash of deep red as it veered away from me in flight. I never saw one perched. Its size is about that of an English Blackbird.

In my rambles I occasionally disturbed odd Night Herons which would fly a short distance with a peculiar zigzag course before dropping back into the reeds.

On many occasions I saw what I am pretty certain to have been Goliath Herons. I was unable to get nearer to them than one is usually able to get near the English bird at home as they were wary and usually spotted me first. They were larger than any Herons I have ever seen and answered the description of Goliaths given in Bannerman's *Birds of West Africa*.

Many other birds were seen at different times, particularly members of the waders and birds of prey, but they were mostly very short glimpses, and as I think mere lists of birds are uninteresting I will refrain from writing them down here.

In the hope that it will be of general interest I will wind up this article with an account of a Parrot-catching expedition which, although it resulted in failure, afforded me sights of wild Grey Parrots which I might not have otherwise had.

In my previous article I mentioned a native from whom one could purchase Greys at 7s. 6d. each. This same gentleman on payment of vast sums of "dash" money promised to allow myself and a friend to accompany him on his next expedition.

Accordingly we met him at his village one afternoon. His equipment consisted of a number of long "pea sticks", a pot full of crude rubber, which he kept covered with water and which when handled was every bit as effective as bird lime, three tame Grey Parrots to be used as decoys, and a pair of scissors hung round his neck on a piece of string. He also brought two very small boys whose use became apparent later on.

He led us miles into the bush until we came to a tall tree with foliage only at the top. Up this he climbed as only a native can

and then I noticed a cunningly concealed platform among the thick leaves. He took up one end of a long string with him. When he reached the top the two small boys fastened the pot of bird lime and the bunch of "pea sticks" with the Parrots perched on them, to the other end, and the whole outfit was then hauled up the tree.

The pea sticks were then placed so that they stuck out at all angles from the tree's foliage. A decoy Parrot was tethered to the end of three of them and the others were smeared with "bird lime".

We were then instructed to make ourselves as inconspicuous as possible and we all sat down to wait through the heat of the afternoon.

At about 5 o'clock the decoys became restless, started to flap their wings and call in loud harsh squawks interspersed with shrill whistles. Shortly afterwards a quiet voice from up the tree said, "Massah, they come!" and almost at once I heard answering whistles seemingly a great way off. Presently, high up against the blue sky I spotted them. I could see their red tails even at that distance—four of them, and as they caught sight of the decoys they began to descend in steep spiral turns. Eventually they were flying round level with the tree tops, and as they passed over I could hear the swish of their wings and see their white cheek patches.

Round and round they flew and eventually settled in a tree about 100 yards away, but they must have been suspicious of something as they would not pitch on the fatal branches and eventually passed on their way to their roosting grounds.

Presently four more came and repeated the performance. At one point they all but alighted with the decoys, but again thought better of it and passed on.

I gathered that when a bird is caught on a limed branch it is hauled in, its wings are clipped on the spot (hence the scissors), and it is dropped to the boys waiting below with a wicker basket.

By this time the sun was setting and our guide informed us that there would be no more Parrots that day, so we packed up.

Strangely enough the natives always referred to them as "Pollies", apparently finding the pronunciation easier than "parrot".

All the captive Parrots I saw at different times were obviously wild caught, and not a bit like the imported ones which used to come to this country all more or less finger tame. Whether the natives of that part of the coast are particularly lazy I cannot say, but they all told me that young Parrots for hand-rearing were unobtainable, as the birds nested in such inaccessible trees. Their only means of securing them was by the method just described.

1942 AT LECKFORD

By E. F. CHAWNER

1942 has been a most disappointing year in every way ; heavy losses among adult birds, including our entire flock of Blue Robins, a fine two-year-old Ocellated Turkey cock, a would-be breeding Secretary Bird owing to egg trouble, a finger-tame Lidths Jay in lovely plumage, and an even tamer Chinese Magpie, to name only a few. In addition a record number of clear eggs and chicks dead in shell from Pheasants and Waterfowl. It will not surprise anyone that we have not felt able to accept the invitation to "write" for the Magazine.

The reasons for this débâcle are : (1) inferior food ; (2) the long cold winter and late spring ; (3) shortage of staff, making it impossible to give the birds the care and supervision they were used to ; (4) the terrible increase of rats, weasels, and other vermin. The Brush Turkey built an enormous mound and certainly hatched one chick, probably more. He has started to make a new mound, consequently the old one was examined. It contained twenty-five clear eggs beside several addled. The surprising thing to me is the size of the eggs. A Brush Turkey is a comparatively small bird, but these eggs were quite as big as a Chinese Goose's egg. Though they had been a full year in the mound, they were beautifully white and clean, and looked like new-laid.

The pair of Andean Geese turned very savage, and we had great hopes of goslings. All the six eggs were fertile, but the embryos died. These Geese are said to lay regularly once they begin, and we hope for better luck next year. The gander is always ready for a scrap with man or beast, he is a fine bird, and very handsome. The pair were hatched at Clères. The Radjah Shelduck, Red-breasted Geese, and Puna Teal made no attempt at nesting, though all had bred the year before. A few Ashy-headed and one Blue-winged Goose were reared, a Cape Teal tried hard, and so did Ross' Snow Geese, but rats, Rooks, or other foes sucked their eggs and left them and us lamenting. The widowed Eider punctually laid, but very sensibly did not attempt to incubate. The Black Swans laid and incubated as usual, but were not allowed to hatch owing to shortage of food. A pair are loose on the river, where they seem quite able to maintain themselves and look very handsome.

A Flamingo escaped some months ago, and no more was seen of him until this week, when we heard that he had been recaptured at a village some way off. That Flamingo was hatched under a lucky star ! He was knocked down at dusk by an R.A.F. lorry, and escaped death by a miracle, even his legs were not broken. The driver stopped, and finding he was only stunned, handed him over to a near-by cottage

where a kind woman bathed his hurts, fed him, and took charge. There he remained until the police rang us up to know if we had lost a bird. The truant was fetched home, and all was well. Having been kept very dry he was delighted to get back to a stream, and spends all his time soaking his legs and feet. We hope he has learnt that "East, West, home's best", and to help him to this conclusion have cut his wing.

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QUEEN ALEXANDRA'S PARRAKEET

Northipsitta alexandræ (Gould)

(I) ITS HISTORY

By DAVID SETH-SMITH

This is not only one of the rarest of the Australian Parrakeets, but one of the most beautiful. It lacks the very brilliant hues of some of the others, but the delicacy of its colours is not exceeded by any. It is certainly an aristocrat amongst the Australian Parrots.

The following is a brief description : Top of the head, delicate blue which shades off into olive green on the nape and back, while there is a pale yellowish-green patch on the shoulders. The cheeks and throat are rosy pink and the thighs red, while the breast and under parts are olive grey. The upper tail-coverts and the very long tail are olive green with a bluish tinge, the inner webs of the outer tail-feathers being rosy pink and the small bill rosy red.

That fine old naturalist, John Gould, must have been delighted to discover this lovely species in a collection received from Central Australia in 1863. It was very soon after the marriage of Queen Victoria's eldest son to the lovely Danish Princess and, being impressed by the delicate beauty of the new species of Parrot, he very fittingly named it after her.¹ These are his words in his *Handbook to the Birds of Australia*.

"I feel assured that the discovery of an additional species of the lovely genus *Polytelis* will be hailed with pleasure by all ornithologists, and that they will assent to its bearing the specific name of *alexandræ*, in honour of that Princess who, we may reasonably hope, is destined at some future time to be the Queen of these realms and their dependencies, of which Australia is by no means the most inconspicuous."

¹ Gould gave this species the English name of "Princess of Wales' Parrakeet", but as this might refer to any Princess of Wales, it seems best to adopt the name of "Queen Alexandra's Parrakeet" as it was clearly named in honour of that particular Princess—Alexandra. The species has been the subject of two coloured plates in our Magazine, the first, by P. J. Smit, in September, 1899, the second, by Roland Green, in May, 1935.

This species is undoubtedly closely allied to the other members of the genus *Polytelis*—*melanurus* and *barrabandi*—but certain systematists are ever on the search for little differences which may provide an excuse for creating new names for genera or species. Thus, in 1895, Alfred J. North, of the Australian Museum, discovered that in the adult male *alexandræ* the third primary wing feather is somewhat elongated and spatulated at the tip, a very weak character, one would have thought, upon which to found a new genus. Mr. North thought otherwise and proposed the new genus *Spathopterus* which was allowed by ornithologists until Gregory Mathews discovered that this name was already used somewhere else. But instead of returning it to the genus *Polytelis* to which it obviously belongs, he created yet another, namely *Northipsitta*, for its reception, and here it remains until somebody changes it again!

The Alexandra Parrakeet is a bird of the Interior of Australia, and it is only when excessive drought compels it to visit less arid districts that we hear of any being seen; so years may elapse without there being any word of these birds, and then a season comes round when they are not uncommon.

When in Western Australia in January, 1908, I was told that a year or so previously these birds had been common in the Kalgoorlie district and, an opportunity presenting itself, I travelled thither with the late Mr. E. A. Le Souef. I heard of many of the birds being captured or hand-reared from the nest though most of these had died. There were no aviculturists there in those days and, in fact, very few in Australia at all, and any such birds that might be acquired were not thought much of because they did not talk. The only specimens I could find were one or two kept in small Parrot cages.

The members of the Horne Expedition to Central Australia of 1894 came across numbers of Alexandra Parrakeets breeding in the neighbourhood of the Hale River, and Mr. Charles Pritchard, a member of the party, wrote: "This is the first time on record that they have made this their breeding ground, but I do not think they have come to stay, and perhaps in a year or so they may be as rare as ever. These birds travel in lots of from one pair to nearly any number, are very tame, feeding about in the grass near the camp, and seem in no way afraid of people, cattle, or horses. They breed in hollow trees, laying five eggs to a clutch and several pairs of birds occupy holes in the same tree. . . . I have a number in captivity, amongst them being an old male bird with a tail 17 inches long." Young birds, taken from the nests, were easily reared for, when placed in open boxes "the old birds came and fed them for days and were as tame as domestic pigeons". Other writers as well testify to the extreme tameness of these birds.

When I published an account of this species in *Parrakeets* in 1902

only four or five of these Parrakeets had been seen alive in this country, but since then aviculture has advanced to a high level in Australia and a good many specimens have been sent to this country from fellow aviculturists over there ; and it has been bred both in Australia and here. The first to breed it here was Hubert Astley in 1912, but by far the greatest success has been achieved by Alfred Ezra who may be said to have successfully established this species in this country. His account, which follows, will be read with the greatest interest.

(2) ITS SUCCESSFUL ESTABLISHMENT IN AVICULTURE

By ALFRED EZRA

This lovely bird has always been my favourite Parrakeet, but only in 1932 was I successful in having a pair which a kind friend of mine, Mr. Harvey, of Adelaide, sent me. They had nested with him several times, but had never reared any young. They arrived in show condition, with every feather perfect, proving the amount of care and trouble that had been taken over them on the voyage. After keeping them in a cage in my bird room for a few days I turned them out into one of my large Parrakeet aviaries. I gave them a vertical nest box about 6 feet long with bark inside and outside, and this was filled with peat moss that was damped, and over this I put in a few pieces of rotten wood. They settled down at once, and became so tame that the moment I walked into the aviary they both flew on to my shoulder, when I fed them with a few mealworms. After being in the aviary for about a week they were keenly interested in the nest, and the cock bird was often feeding the hen. Very soon after four eggs were laid, and the hen bird sat well, the cock fed her all the time. All four eggs were hatched early in July. As the birds were very tame I was able to look into the nest box as often as I liked without disturbing them. The cock bird worked very hard, and kept on supplying the hen and the young with food all day long.

About the end of August one sturdy young bird left the nest, and the other three followed in a few days. I have never seen more healthy young birds, and so strong on the wing from the moment they left the nest. The cock bird gave up feeding them, and always flew away when any of the young ones came up to him for food, but the hen bird fed them all day long.

While nesting and feeding young the Parrakeets were given the ordinary seeds, with a few mealworms every day, also a lot of groundsel, chickweed, lettuce, apple, and growing wheat and oats from the fields, and sometimes a piece of sponge cake. By the end of September the young were almost as large as the parents, but paler in colour, and of course their tails were not so long. About the middle of October

the four young birds looked exactly like the adult birds, and were then separated from the parents. In September, when they were fully reared, the hen started to lay again, but as it was too late in the season I removed the nest box from the aviary. As these birds are so rare, and have not been bred in Europe for a long time, I was more than delighted with my good luck. I have never had birds settle down so quickly and rear young so soon after a long voyage as this pair have done. The second year I expected at least two broods from this excellent pair of birds, but was most disappointed.

In 1933, early in April, the same old pair laid four eggs. All were hatched. One young was found dead in the nest and the other three were thrown out of the nest. They nested again laying three eggs. Two young ones were hatched. One was found dead in the nest, and the other one was seen being carried about by the female in her beak dead. After this extraordinary behaviour I thought a change would do them good, so I removed them into another aviary, where they settled down at once and laid three eggs. One young one was hatched, but the other two eggs were infertile. This young one was also killed when about a fortnight old. She again laid four eggs, and just as they were due to hatch I removed the cock bird from the aviary. Two young were hatched and successfully reared. I think the trouble was caused by the cock bird being too kind and attentive to the hen, and spoiling her by feeding her all day long, and she never took the trouble to leave the nest. When the cock bird was removed she had to come out to feed, and in this way she also fed and reared her young. I have tried this plan every year since with great success, and the same pair have reared dozens of young ones. When only a year old the young birds went to nest and laid, but I lost the hen through being egg bound. Another pair only a year old laid, but all the eggs were infertile. It is interesting to note that these Parrakeets nest when they are not quite a year old.

In the last ten years I have reared well over twenty of these beautiful birds, and the old cock is still going strong, but I lost the hen two years ago. No birds have given me greater pleasure, nor have any birds done so well with me. This year I have again reared four lovely young ones. What is so fascinating about this Parrakeet is that he is so beautifully coloured and is always tame and most happy in an aviary.

THE WEST AFRICAN GROOVE-BILLED BARBET

(Pogonornis dubius)

By SYDNEY PORTER

This is the strangest and most peculiar member of the Barbet family. Several people have asked me, not knowing they were Barbets, if they were small Toucans. Certainly their colouring and large beaks do give them a certain resemblance to those birds, especially their glossy black upper parts, brilliant red, white, black, and pink underparts, and large yellow beak.

When I received them I was told that they needed a box to sleep in, but though I gave them many none seemed to suit them. Later we put in their aviary a thick solid tree trunk ; the birds took to this with alacrity and immediately started to hollow it out with the agility of a couple of Woodpeckers.

For years I suffered from a dearth of suitable hollow nesting logs for Parrakeets, now these birds fully supply my needs. I don't think we should do better if we kept a resident joiner ! A thick log about two to three feet long and ten to twelve inches in diameter is fastened in the aviary, and immediately the birds start to work on it. A perfectly round hole, about two inches across, is made at the side near the top, and then the log is beautifully hollowed out. The chippings are carefully collected and neatly piled up in one corner of the aviary. This is no doubt owing to the birds' natural instinct of taking all the chippings away from the nesting hole in case of giving the location away to its enemies.

It takes about a fortnight to complete one log, both birds doing their fair share. They work very much like a Woodpecker, to which the Barbets are no doubt closely related. The birds cannot work logs of hardwood such as oak, etc., so we supply them with logs of fairly soft wood which are tending to become decayed.

No birds I have ever kept seem more impatient of cold, they only appear really happy when the thermometer stands at 80° F. or more ; then they are lively and their plumage tight, glossy, and bright ; if the temperature falls to 60° F. they are dull and listless, and their feathers lose the gloss. I have never known them to bathe, but we spray them each day with a fine horticultural spray. The importance of humidity for tropical birds is often overlooked. It is surprising the difference a week or two's spraying makes to such birds. A fine " mist " spray should be used. " Enots " Pneumatic Sprayer No. 1807 is the best for this purpose, and when fully pumped up will fill the air with a fine mist-like spray for over an hour.

In a wild state the Barbets live almost wholly on fruit, but in these hard times my birds mainly subsist on a soft food mixed with scalded

biscuit meal, also apples saved from our own orchard ; only one a day is allowed, but they would eat six if we could spare them. Wild berries such as privet, hawthorn, and elder in season, are greatly relished.

As mentioned before, the bird may best be described as resembling a miniature Toucan, glossy black above, the breast and under parts are a striped arrangement of bright crimson, black, white, and pink. At the side is a square patch of dense pink and white feathers which is doubtless used in display ; these are usually hidden beneath the wings. The lower back is white. The large yellow beak is considerably notched and toothed, while under the lower mandible is a row of parallel grooves which run at right angles to the beak, but these are hidden by the long black bristles which almost cover the lower mandible. Similar bristles spring from the nostrils, but these are not as long as the lower ones which reach the tip of the beak. What these bristles are used for is a matter of conjecture, possibly they are something to do with the sticky fruits upon which the birds feed in a wild state.

A very interesting description of this bird in West Africa is given by Dr. Hopkinson in a volume of *Bird Notes*, but as most of my books are packed away for the "duration", I cannot quote it. However, having a volume of Bannerman's *Birds of Tropical West Africa* handy, I quote the following about the bird in a state of freedom : "The Bearded Barbet in Northern Nigeria is to be met with almost everywhere, in the bush, on cultivated clearings . . . where there are large trees. A very favourite haunt is the forest at the foot of a rocky hill or outcrop. Wholly arboreal the Bearded Barbet is never seen on the ground. It is an alert-looking bird peering about from its branch, and when it is about to move off sometimes whisking its tail." It is also stated that wherever a certain kind of wild fig tree is found there one is almost sure to meet with these Barbets.

I don't think this Barbet was imported before 1939. Dr. Hopkinson mentions in the Magazine for September, 1940, that there was a pair at the London "Zoo" which were from a dozen imported by Fockelmann. Mine must have originally come from this consignment, the other I believe went to America.

BREEDING RECORDS TO DATE. PART VII

(Continued from p. 168, Vol. VII)

By Dr. E. HOPKINSON, C.M.G., D.S.O.

PARROTS

Broadtails

PENNANT'S PARRAKEET (Nos. 397, 398), *Platycercus e. elegans* (Gm.), *P. e. adalaidae*, Gld. Adelaide Parrakeet.

The first record of breeding I have is Rousse in France, *Bull.* 1880, p. 221; for the U.K. a success is recorded in the *Report of the U.K. Foreign Cage Bird Soc.*, Jan., 1892, and another by Wilson in *B.N.* iv, 251; he reared 4 young in 1905. Since then they have been frequently bred both here and abroad.

The Adelaide Parrakeet, a subspecies, was first bred by Fasey in 1907—four young reared; A.S. Medal (*A.M.* 1907, 342, 344), and Poltimore reared one young one in 1914 (*B.N.* 1914, 49). I feel sure that they have also been bred by others, but have no actual records. The Adelaide × Pennant cross is included in Page's book, and Captain Waud reared four such nominal hybrids in 1925, one of which went to the Zoo (*A.M.* 1926, 328).

Hybrids

PENNANT × ROSELLA.

This cross is given in Page's book. The wild-bred hybrid of this cross is the "Red-mantled Parrakeet, *P. erythropeplus Salvadori*". In *B.N.* 1912, some of these were advertised at 70s. each, whether wild-caught or cage-bred, I cannot say, but in *B.N.* 1911, 317, Mariner had reported the rearing of three such hybrids in that year, and the birds advertised the next year may well have been his. The "Adelaide × Rosella cross" was bred by Arthur about 1892 *teste* Finn and Arthur in the "*Parrots*" (*Cage-Bird Handbook*, 1927).

PENNANT × YELLOW-NAPED PARRAKEET.

Fasey reared three young birds in 1905 (*A.M.* 1905, 333).

YELLOW-BELLIED PARRAKEET (No. 399), *Platycercus caledonicus* (Gm) (*flaviventris*, Temm).

Russ says that the first breeder was Cornely in the eighties, but Neunzig has nothing to say about breeding. In England the bird was bred for the first time by Lord Tavistock in 1934, four young which left the nest on 12th August, and were all reared (*A.M.* 1934, 261; Medal, 326).

Hybrids

YELLOW-BELLIED × ADELAIDE PARRAKEET.

One hybrid was bred at Woburn at liberty a long time ago, *teste*

Tavistock in *lit.* 1st January, 1927; in his *Parrots* (1928) he gives particulars of this event.

YELLOW-BELLIED PARRAKEET × ROSELLA.

Bred by Whitley at Paignton in 1928 and 1929. I saw the young birds of both years in May, 1930, when the hen was again brooding more young, which were also reared. He has also bred further crosses, some of which triple and quadruple crosses I saw in 1932, of which the parents had been these two Parrakeets (Yellow-bellied and Rosella) and two other *Platycerci*, but which these were I forget.

The cross with the male YELLOW-NAPED PARRAKEET is also on record.

YELLOW-RUMPED PARRAKEET (No. 400), *Platycercus flaveolus*, Gld.

First breeder, Fasey (U.K.), in 1904, four young being reared and the Avicultural Medal awarded (*A.M.* 1904, 353). Neunzig writing in 1921 (*p.* 744) says, "it has been bred in England, and at Copenhagen in 1892." This last would be the actual first therefore. Later on Tavistock reared one young one in 1926 (*A.M.* 1926, 279) and bred them again in 1936.

Hybrids

YELLOW-RUMPED PARRAKEET × ROSELLA.

Bred by Arthur in 1908 *teste* Finn and Arthur in the *Cage-Birds Parrot Handbook* (1927). Page includes the cross in his book, no doubt on the Arthur record.

MEALY ROSELLA (No. 401), *Platycercus adscitus palliceps* (Lear).

Repeatedly bred, says Neunzig. Success in France is also recorded in *Bull.* 1880, *p.* 561 (Delamain), and two other early French successes are given by de Brisay in his *Dans nos volières*, *p.* 302. It has also often been bred in the U.K., but I know no very recent successes, and can only quote the following records, though I know there are others. Sergeant (*A.M.* i, 124) before 1895; Arthur, 1899 (*Notes on Cage Birds, second series, p.* 85); Rayner, 1914, one young one reared (*Bird Notes, 1914, p.* 218).

Hybrids

MEALY ROSELLA v. ROSELLA.

MEALY ROSELLA × BARNARD'S PARRAKEET.

Both these crosses were bred by Whitley in 1926 and following years; I saw there young birds of at least two of the years.

MEALY ROSELLA × PENNANT PARRAKEET.

Bred in 1935, by F. H. Rudkin in California, see *Aviculture* (U.S.A.), 1935, 117. One young male was reared. Further crosses were reared. Mr. Rudkin kindly gave me details in letters; of these the following is a summary.

The young male bred in 1935 was mated with a hen PENNANT in 1938, and one young bird reared : a male, three-quarters Pennant, which when a year old was not yet in full colour and looked like an ADELAIDE PARRAKEET ; it was mated in 1939 with a hen PENNANT, but I have heard nothing further. If young resulted they would be seven-eighths Pennant. More of the original cross were bred again in 1940. If Mr. Rudkin sees this I hope he will let us have more details.

Hybrids are also on record with *males* of BAUER'S RED-RUMPED and ROSELLA PARRAKEETS.

ROSELLA PARRAKEET (No. 402), *Platycercus eximius* (S. and N.).

"Have been often bred and readily go to nest," says Neunzig (p. 742) ; the same holds good for this country, for which there are many records, of which I will mention regular annual breeding with Dart (*B.N. v, 201*) and Shore Baily who one year reared five young (*B.N. 1915, 42*). They are now being frequently (I think annually) bred at Paignton and elsewhere. The earliest record I have is a French one (Jourdain, *Bull. 1877, 481*).

Hybrids

ROSELLA × MEALY ROSELLA.

Teste Page's book, which no doubt mean the hybrids bred by Arthur in 1891 and exhibited at Preston Show. See *Parrots, Cage-birds Handbooks* (1927) by Finn and Arthur.

ROSELLA × STANLEY PARRAKEET.

Two reared by Astley in 1909 ; see *A.M. 1909, 293*.

ROSELLA × YELLOW-NAPED PARRAKEET.

ROSELLA × REDRUMP.

My authority for these two crosses is only Page's book ; the first is recorded both ways.

Crosses are also on record with males of the MEALY ROSELLA, the YELLOW-BELLIED, ADELAIDE REDRUMP, and BARABANDS PARRAKEET (? which way for the last).

BROWN'S PARRAKEET, *Platycercus venustus* (Kuhl.) (*brownii*, Temm.).

Tavistock recorded success in 1928 in *A.M. 1928, 234*, but says that they had been previously bred in Fifeshire by Miss Drummond, and an account published by her either in the *Avicultural Magazine* or in *Bird Notes*, but this account I cannot find. The species was bred at Keston quite freely about 1935 (*Boosey : the Foreigner, 1935, 135*) and in *Bird Fancy, 9th July, 1928* ; another success with Tavistock is given.

STANLEY PARRAKEET (No. 403), *Platycercus icterotis* (Kuhl.).

Both Astley and Fasey reported young in July, 1908, and "tied for

a first", *A.M.* 1908; Perkins also bred them the same year, *teste* Page, *B.N.* vii, 127. Smith at Kendal had successes for several years (*B.N.* 1910, 262), and Whitley has more recently bred them often as well as crosses. He has bred so many Broadtail crosses, without recording them, that I expect the numbers given here do not include all there should be if Paignton records were available.

Hybrids

STANLEY × ROSELLA.

Teste Page's Book, where the cross is also given the other way, *viz.* by Astley in 1909. The cross was more recently bred by Hampe in Germany, 1935 (*A.M.* 1937, 251), as well as the further cross, STANLEY × STANLEY-ROSELLA hybrid.

STANLEY × PILEATED PARRAKEET.

Bred by Patrick in California in 1929, two young being reared, *teste* Prestwich, *A.M.* 1930, 29.

PILEATED PARRAKEET ("Red-capped Parrakeet") (No. 404), *Purpureicephalus spurius* (Kuhl) (*pilaetus* Vigors).

Bred by Astley and by Fasey in 1909, two almost simultaneous first successes, though Astley won by a short head and was awarded the A.S. Medal (*A.M.* 1909, 291, 307; 1910, 198; 1911, 162. Dr. Leon Patrick bred them in California in 1910 (*A.M.* 1930, 335, and *L'Oiseau*, 1931, 715). Whitley has bred them more than once at Paignton, I know, but of course there is no record.

(To be continued.)

* * *

NOTES

THE ROYAL ZOOLOGICAL SOCIETY OF SOUTH AUSTRALIA

Zoo News, the bi-monthly report issued by the Royal Zoological Society of South Australia, continues to be received regularly, and is striking evidence of the "aliveness" and enterprise of that Society. The fine collection of Pheasants which is marred by the fact that there are only single specimens of several species, has been improved by the addition of a hen Cheer and a fine pair of Lady Amhersts, and arrangements are in hand to procure hen Edwards and Impeyan. The Society also recently acquired several Flock, or Harlequin, Pigeons, which once occurred in Northern Australia in very large numbers, but now have become comparatively rare. These new arrivals at the Zoo nested, and at the time of the issue of the July-August report, one young had been reared. The African Penguins hatched a young one which was successfully reared, and the Fairy Blue Penguins also produced eggs. Three Albino Magpies came into the possession of the Society, having been blown out of a nest at Lyndoch; two of these birds are pure albinos the other being a pale buff colour.

The Society is faced with a problem which often confronts aviculturists—lack of accommodation; this necessitates the mixing of species in the same cage, sometimes with dire results during the breeding season, owing to the unfortunate predilection shown by some birds to devour the eggs or young of their companions.

The Royal Zoological Society of South Australia is an example of the spirit which permeates the whole of the British Commonwealth of Nations in carrying on in spite of all difficulties, and the good wishes and admiration of their colleagues in the British Isles are warmly accorded them.

P. B-S.

PENNANT'S PARRAKEET LAYING 24 EGGS

This note is very brief. I have only seen my birds from time to time when on leave. I purchased my Pennant hen early last year (1942), and she still had the immature green colouring on the back, although otherwise fully adult in appearance. Unfortunately I was unable to obtain details as to her age.

As she was introduced to new quarters, I hardly expected her to nest straight away, and was surprised to hear that she had taken to the nest box. When I next visited home, I was told she had been in and out of the nest for about a month, but had never spent very long sitting. I therefore decided to investigate, and found eighteen eggs, all cold.

The cock was continually driving her when she was out in the aviary, and I can only think that this, combined with her nervousness of new surroundings which prevented her from sitting, must have caused her unusual performance. She laid a further six eggs, after which the cock gave up his efforts to make her sit, and she did not approach the nest box again throughout the season.

Had I been at home, I should have set some of the eggs under other pairs, and I did try three which appeared to be the most recently laid, under a pair of Cockatiels—the only available nest at the time, but they failed to hatch. Again, as I was unable to make personal observation, I cannot say if they were infertile or if the fosters just deserted them.

When home recently, I opened the nest boxes in the various aviaries, and the following day the cock was driving the hen again.

I am now concerned to find out if she will again lay, or if last season's effort has exhausted her. I will endeavour to let you know what happens, later in the season.

This war has certainly upset our normal activities, and I can only hope it will not be of long duration.

K. A. NORRIS.

BREEDING BLUE-FRONTED AMAZONS IN SWITZERLAND

In looking through a book of newspaper cuttings I came across an extract from *The Feathered World* of 26th July, 1895, which records the successful breeding of this species in the open.

In 1894 a pair of Blue-fronted Amazons belonging to Dr. Wyss, of Hunenburg, in the canton of Zug, Switzerland, which had been allowed to fly freely around the meadows and forest for twenty years, successfully reared two healthy and strong young ones. Again, in 1895, the old birds nested in the same spot with successful results.

The position chosen for the nest was a deep hole in an old pear tree, about a third of the height of the tree from the ground. The writer, Mr. H. R. Hayes, remarks that "during the breeding time the birds are very loving and extremely annoyed (make a tremendous swearing noise) if anyone out of curiosity goes near their nesting-place. . . . Four eggs were laid this year (1895) and with extraordinary regularity, namely, on the 13th, 16th, 19th and 22nd June respectively. . . . Last year all the four birds left the nest on 30th August, when all were taken into a room where the old birds used to pass the autumn and winter".

D. SETH-SMITH.

* * *

CORRESPONDENCE

THE HIGH PRICE OF BIRD SEED

I would like to voice my protest regarding the exorbitant prices which some fanciers and so-called bird-lovers have been charging for seed. Here in Leeds a quite inferior seed costs 12s. 6d. per lb.; in pre-war days better seed was sold at 6d. lb. I am sorry to say that out of a collection of over four hundred birds I have only two left; these are nectar feeders, otherwise they would have died, as my others did, owing to the inferiority of the exorbitantly priced seed which I had to feed them with.

CECIL BERNSTEIN.

19 COPGROVE ROAD,
LEEDS, 8.

[The Editor accepts no responsibility for opinions expressed in Correspondence.]

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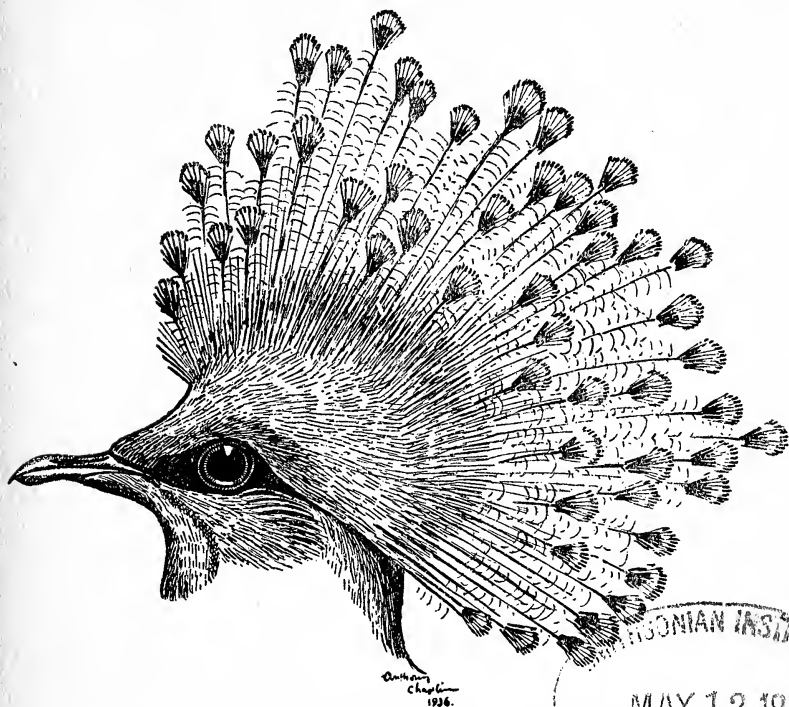
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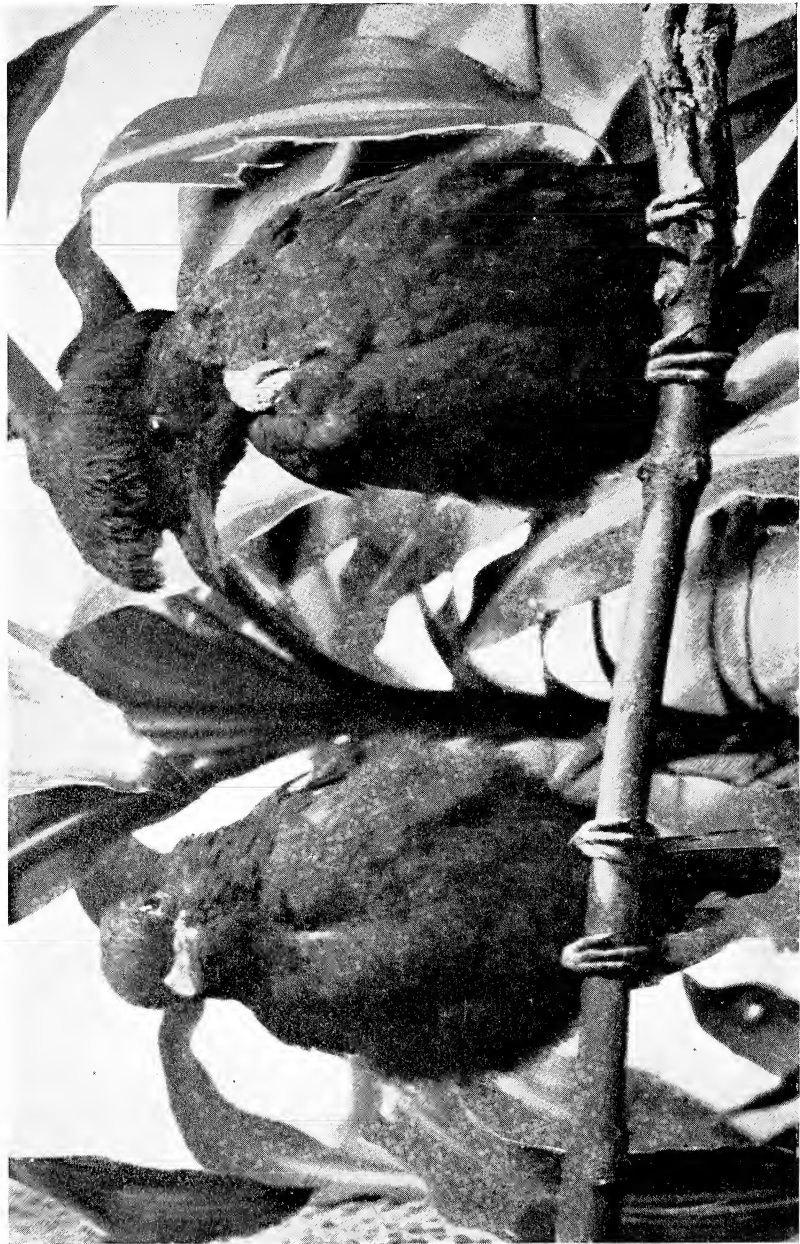
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[New York Zoological Society

AVICULTURAL MAGAZINE

THE JOURNAL OF THE
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MAR.—APRIL, 1943

A COLLECTION OF BIRDS FROM COSTA RICA

By J. DELACOUR

For more than ten years it has always been a thrilling experience to see Mr. C. Cordier arrive with a collection of birds. It happens once or twice a year. Until 1939 he used to bring his collections to Clères, and the surplus material found its way mostly to the London Zoo, to Mr. A. Ezra and Mr. Spedan Lewis in England, and to Dr. E. Beraint and M. François Edmond-Blanc in France. These happy days are over, alas! But Mr. Cordier still brings his collections, now to the United States. He brought us, to the New York Zoological Park, a marvellous Colombian collection in December, 1941, and early in October, 1942, he was back again, this time from Costa Rica, with perhaps the finest lot of birds he has ever secured.

There are ninety-six birds in the collection, including three Umbrella Birds which have never before been exhibited alive. Fifty-four Humming Birds of which the majority have never been imported anywhere, and eighteen Quetzals, often called "the most beautiful birds in the New World".

Famed for its extraordinary, umbrella-like crest, the Umbrella Bird was probably the last great rarity among tropical American birds, that have ever been exhibited. Until 1937 it shared that distinction with the legendary Quetzal, the sacred bird of the ancient Aztecs but in that year the Bronx Zoo obtained nine of them. The eighteen Quetzals now brought by Mr. Cordier are a Costa Rican form of the bird, and only one specimen of this form has ever come to the United States.

The Umbrella Bird is about the size of a Crow, and is jet black except for a patch of bare, bright red skin on its throat and breast. Growing from this is a small, fleshy lappet. The bird takes its name from the extraordinary umbrella of black feathers on top of its head. These grow forward towards the bird's beak and can be raised, lowered, or spread sideways to cover the face and beak. Old natural history books often show the crest raised straight over the head in mushroom shape, but the drawings were prepared from the skins

of dead birds, and nobody actually knew what the living bird did with its crest feathers.

From the observations of Mr. Cordier, the Umbrella Bird spreads its "umbrella" several times a day, when it is feeling particularly good. If it actually sheds rain like an umbrella, the bird is more fortunate than others in central Costa Rica, for it rains eleven months out of the year in the Umbrella Bird country.

The Umbrella Bird is known scientifically as *Cephalopterus ornatus glabricollis*, and it is found only in Costa Rica and Western Panama. There are two other kinds of the bird, found in other parts of Central America. It lives in thick jungles, inhabiting the tops of tall trees—which is probably the reason why so many bird collectors have in the past failed to catch it. Many expeditions have sought the Umbrella Bird, but could obtain it only by shooting.

The Bronx Zoo's specimens were caught in special nets slung high in the trees, and Lee S. Crandall, Curator of Birds, said that they were obtained alive only because Mr. Cordier is "one of the best two or three bird collectors in the world to-day".

The Costa Rican Quetzals, known scientifically as *Pharomacrus mocinno costaricensis*, are mostly adults, and several of them have begun to grow the long upper tail coverts which are the birds' greatest glory next to their amazingly iridescent green-gold-and-blue plumage. Some of the tail plumes were broken off during shipment, but when they grow out, and as the birds get older, they will eventually be nearly a yard long.

The fifty-four Humming Birds in the collection comprise eleven species, at least seven of which have never been exhibited in any bird collection before.

Although larger shipments of Humming Birds, in point of numbers, have been made by Mr. Cordier to Clères, in its variety and beauty the present lot is the best that has ever been made from the highlands of the American tropics.

In the new home of the Humming Birds that is being rushed in the Bronx Zoo's Bird House, they will be exhibited behind glass in small brightly lighted cages, while the public will view them from a black passageway.

Mr. Cordier left New York for Costa Rica on 4th March, 1942. He established a collecting base on the Cataratas River, several days' travel north of San Jose, the capital, and on the banks of this river at an altitude of 3,000 feet, he caught his first Umbrella Bird. The area is on the Atlantic slope of the continental divide where the rain falls constantly eleven months of the year. Although Umbrella Birds are supposed to range over all of Costa Rica, Mr. Cordier saw them nowhere except around the Cataratas River and a journey of an hour and a half in any direction carried him out of Umbrella Bird country.

The Quetzals and Humming Birds were all caught on the sides of the Irazu volcano north-east of San Jose. The Quetzals were captured at night, Mr. Cordier sweeping them out of the air with a butterfly net. The Humming Birds he caught with sticky gum on the tip of a fishing pole. He waited until they hovered over a flower, and then touched the pole to their buzzing wings.

Late in September he brought his birds out of the jungle to San Jose. Space was made on a plane for Miami—but at the last minute it transpired that there was no room for all the light but bulky Humming Bird cages. Mr. Cordier thereupon raided show stores in San Jose, got together a score of pasteboard shoeboxes, and divided them into compartments. He filled each compartment with loose hay, packed his Humming Birds in the hay, and they travelled with perfect comfort. The hay kept them from fluttering too much and gave them something to cling to.

Not a single bird was lost on the trip except by a serious accident at Tegucigalpa, Honduras, where the plane was forced to remain in the full sun for several hours. Some birds suffocated despite everything Mr. Cordier could do. Fortunately, none of the rarer species was lost.

All the birds, a list of which follows, arrived in extraordinarily good condition, and more than a fortnight after their arrival none had died.

We had to dispose of some of the Quetzals, keeping ten for our collection. For the first time, I saw perfect specimens of these magnificent birds, tame and feeding well. Six inhabit a large planted aviary, and although there are several adult males, they never quarrel; neither do they molest the small birds, mostly Sugarbirds and Tanagers, which share their flight. The Umbrella Birds are also extremely tame and harmless.

We are now completing the transformation of one of our halls, where Pigeons and Parrots used to be kept in rather old-fashioned and ugly cages. We are making five long planted flights of different styles, more or less in the same way as the greenhouse aviaries at Clères were planned. One has a fast-running stream and is called the "Tropical American mountain stream". It contains some Blue-headed and Ruddy Buntings, a small South American Barbet, a dozen Manakins and Sugar Birds, a few small Tanagers, and a pair of Fire-throated Humming Birds (*Panterpe*). The next one is an "Indian-Malayan jungle"; there live some small Fruit Pigeons, Green wings, and Bleeding Heart Doves, a Pitta, a Rothschild's Starling, a Shama, a small Javan Barbet, some Bulbuls and Babuls, a few Timor Paddas and Crested Buntings.

The other three, which will soon be completed, will be a "desert", an "American Garden" and a "Tropical American Rain forest". It is great fun designing and planting these aviaries. I find it the

best substitute to the pleasure I so long used to have at Clères on a larger scale.

BIRDS COLLECTED IN COSTA RICA BY CHARLES CORDIER FOR NEW YORK ZOOLOGICAL PARK.

Received 9th October, 1942

| No. of Specimens. | Common Name. | Scientific Name. | Distribution. |
|----------------------|--|---|---|
| 3 | Delattre's Sabre-wings | <i>Campylopterus hemileucurus</i> (Lichtenstein) | S.E. Mexico to W. Panama. |
| * 6 | Rose-throated Flame-bearers | <i>Selasphorus flamula</i> Salvin. | Costa Rica. |
| * 1 | Scintillant Flame-bearer | <i>Selasphorus scintilla</i> (Gould) | Costa Rica and W. Panama. |
| * 10 | Lesser Violet-ears | <i>Colibri cyanotus</i> (Bourcier & Mulsant) | Costa Rica to Ecuador. |
| * 7 | Guimet's Flutterers | <i>Clas guimeti</i> (Bourcier & Mulsant) | Nicaragua to Peru. |
| * 12 | Costa Rican Fire-throats | <i>Panarpe insignis</i> Cabanis & Heine | Costa Rica & W. Panama. |
| * * | Admirable Hummingbirds | <i>Eugenes fulgens spectabilis</i> (Lawrence) | Costa Rica and W. Panama. |
| * 3 | Princess Helena's Coquettes | <i>Lophornis helena</i> (Delattre) | S.E. Mexico to Costa Rica. |
| * 1 | Costa Rican Snow-cap | <i>Microchera parvirostris</i> Lawrence | E. Costa Rica and Nicaragua. |
| * 2 | Costa Rican Mountain Gems | <i>Oreophya castaneiventris calolema</i> (Salvin) | Costa Rica. |
| * 4 | Coppery-headed Emeralds | <i>Elvira cupreiceps</i> (Lawrence) | Costa Rica. |
| 18 | Costa Rican Quetzals | <i>Pharomacrus mocino costaricensis</i> (Cabanis) | Costa Rica and W. Panama. |
| * 3 | Bare-necked Umbrella Birds | <i>Cephalopterus ornatus glabricollis</i> Gould | Costa Rica and W. Panama. |
| 6 | Montezuma Giant Caciques | <i>Gymnostinops montezumae</i> (Lesson) | S.E. Mexico to Panama. |
| * 4 | Southern Long-tailed Manakins | <i>Chiroxiphia linearis fastuosa</i> (Bangs & Peters) | Costa Rica and Nicaragua. |
| * 4 | Golden Manakins | <i>Manacus auranacus</i> (Salvin) | Costa Rica and W. Panama. |
| * 2 | Yellow-thighed Manakins | <i>Pipra mentalis ignifera</i> Bangs | W. Costa and W. Panama. |
| * 1 | Velvety Manakin | <i>Pipra coronata velutina</i> Berlepsch | S.W. Costa Rica and W. Panama. |
| 1 | Lesson's Motmot | <i>Momotus lessonii</i> Lesson | S.W. Mexico to W. Panama. |
| 2 | Blue-hooded Euphonias | <i>Tanagra musica elegantissima</i> (Bonaparte) | S. Mexico to W. Panama. |
| 2 | Dow's Callistes | <i>Calospiza dowi</i> (Salvin) | Costa Rica and Veragua. |
| 1 | Central American Yellow-winged Sugar-bird. | <i>Cyanerpes cyaneus carnelipes</i> (Sclater) | S. Mexico to Panama. |
| * 3 | Costa Rican Tree Partridges | <i>Dendrotyx leucophrys hypospodius</i> Salvin | Costa Rica. |
| * 1 | Mexican Ant-thrush | <i>Thammodulus dolatus mexicanus</i> Allen | Mexico to Costa Rica. |
| 1 | Kentucky Warbler | <i>Oporornis formosus</i> (Wilson) | Nebraska and W. Pennsylvania to N. Georgia and E. Texas. |

* Never before exhibited alive.

THE LIFE OF MOSES

By A. H. SCOTT

His name was certainly Moses, for he was found abandoned among the bulrushes, and drawn out of the water, but to what family he belonged is not so clear. He was rescued in strange enough fashion late one evening in June. I had been casting for trout from a tiny island in my pond, and was returning to the shore across a narrow plank bridge when my eye was caught by a little black object in the water, about the size of a mouse and nearly submerged. It was near enough for me to reach by leaning out with a landing net, and being very ignorant of such creatures I was delighted to capture what was evidently a newly hatched water bird of some sort. From its feet I guessed it was a Grebe, and as it was so small it seemed likely to be a Dabchick ; but it was so near death that my first thought was to dry and warm it, and my second to look round for any others which must have met with disaster at the same time. I soon caught sight, on the other side of the bridge and farther away, of another little black blob plaintively appealing to the Universe against a watery death. As it was just possible, making a long arm, to touch it with the tip of my rod, I soon managed to get its head between the rod end and the line, and then to drag it in by the neck. No others were to be seen from the bridge or the shore, but returning to the island I heard again the weak piping sound, and presently was able to make out the third of the family a long way off at the edge of some bulrushes. Between us lay a stretch of shallow weedy water covering a great depth of mud, then a few yards of deep water, and again shallow water over a treacherous bottom. To flounder and swim, and flounder again through tangled weeds was a most uninviting idea, and the only boat on the pond was lying completely waterlogged. It seemed impossible to do anything at all, and very reluctantly I recrossed the bridge and climbed the homeward hill ; but my conscience troubled me. We have such a deep-seated instinct to save life from drowning that even the curious busy blue-bottle swimming unhygienically in our glass of milk becomes an object of compassion. I turned back to the pond to think again, and looking intently at the little victim I had an idea. The bird was beyond the range of ordinary casting, but did not seem quite impossible to reach, and certainly it was better to get a tiny hook in the skin than to drown. So I set to work, and after many misses landed my fly several times across its back, but again and again it trickled off the close-set down. At last the line tightened, and Moses (for of course it was he) was very gently wound ashore. His luck was in, as the hook proved to be not in his body but caught in a piece of weeding which was twisted round his feet. The slow mid-summer twilight was turning to dusk, and no

more of the family could be seen or heard, so I hurried home better pleased than with the largest fish. I had never heard of Grebes being reared by hand, but did not expect any great difficulty, for the near-by forest provides me with ample supplies of ant eggs, the best of all foods for a great variety of birds. The problem of warmth was solved in advance since we possess an Aga cooker on which a great many young birds have been reared, some almost from the egg. The Aga cooker is built on the Thermos principle, and is about the only instance of an article of humble homely use to which a distinguished man of sience has thought it worth while to devote his brains. Many and various are the virtues proclaimed by its makers, yet they omit to mention its most outstanding excellence, that it is the perfect instrument for rearing young birds. The temperature of its surface, graduated from the edge to the centre, remains stable, and my method is to put flowerpots at the right place for the correct warmth, and in the flowerpots some hay, above which a nest is arranged for the young birds. They are lightly covered with any suitable material, and a second flowerpot is inverted over the first. In this way the even temperature of nature is maintained, and there is no lack of fresh air and no smell of lamps. The birds, of course, are uncovered for suitable periods varied to suit their age. At this point I seem to hear feminine voices murmuring in unison: "All very well, but what about the cook?" Now I was just coming to that, so be patient. It is largely a matter of money, of not having too much. Riches, we know, make it difficult for people to enter the Kingdom of Heaven, but they bar the way to many other places, and we may doubt whether in all England there is a single millionaire who enjoys the *grandes et petites entrées* to his own kitchen. A man may possibly overcome the natural fear of butlers, but these, though men of uncongenial punctilio and estranging decorum, have not the nervous irritability of the creative artists who, within their sacred precinct, strive continually after unattainable perfections; and though riches may usually be a good substitute for moral courage, Mr. Dives will hardly venture so far as to place flowerpots upon his kitchen range. The ordinary fellow of modest fortune has better prospects, but he requires a little prudence and foresight. He, or rather his wife, must select a cook who is either very young, so young that she can be bullied and cajoled, or else very old, so old that she has learned life's final lesson of resignation and renouncement. Our Mrs. Smith was over seventy, with a game leg and memories of better days, so I was entitled to assume that she had long recognized the truth of the Stoic doctrine that the wise man will nobly agree with Necessity. For a long time indeed it appeared that I was right, and all went smoothly without objections or complaints. Already there were four sets of flowerpots upon the range, containing respectively an orphaned Canary, two cream-

coloured Sparrows from different nests of wild birds which had mated with others released from my aviaries ; and lastly a pure white Chaffinch with a grey cap, too precious to be left to its own mother or any bird whatsoever. A pair of extra large pots were added for the Grebes, and after a first and, as I hoped, a last forcible feeding they were tucked up for the night. In the morning I was able to examine them more closely, and to observe their movements when placed on the ground. Waterfowl experts will hardly be interested in a description of these birds, but such experts are no doubt few in number. To me at least it was a fascinating study, for these very curious creatures are so peculiar in appearance and behaviour that the ignoramus would certainly imagine that they came from some distant land. Their movements were very clumsy, for they seemed unable to stand up for more than a moment and humped themselves along with the aid of their rudimentary wings or flippers. Seen at a distance, with their heads down they were very like toads, but if they stopped and raised their long necks one was immediately reminded of little water tortoises. A few days later, when they stood upright without difficulty, every layman who saw them imagined that they were baby Penguins ; and indeed the resemblance was remarkable, as they stood with their white waistcoats and ludicrous air of good humoured importance. The back and sides were at first covered by seven neatly cut fawn stripes and as many black ones. The head and neck had similar markings, fewer and narrower ; but within three or four days the colours of their body stripes began to "run", changing visibly every day, until at about nine days old they were untidily mottled with dirty fawn and black. To the changes in their colour it will be necessary to return later. On the first morning I offered them ant eggs, milksop, and assorted creepy-crawlies from the pond, but they rejected everything hard, such as water shrimps, even if crushed in advance. They fed in the same way as Moorhens, and, I suppose all similar birds ; that is to say they were incapable of picking up food, and never opened their beaks to feed, but stretched up their heads expectantly, and snatched and swallowed morsels held just above their beaks. One of the three was weak from the start, and failed to swallow in this manner, though it made feeble attempts ; it was necessary to open its beak, and push the food down. After three days it died. I expected that they would want to spend a good deal of time in the water, but this was by no means the case. Four or five times a day I took them out to an aviary with a shallow little cement pond about 4 feet wide. They dived and splashed with great delight, but were out again very quickly ; thirty seconds I found was the longest time they would remain, and their down became quickly soaked. Wishing to see whether this was the only reason for their hasty bathing, I put them in quite warm water. This appeared to

please them very much, and they remained in it as long as two minutes. At the end of that time they were so waterlogged that only their heads were above the surface, and evidently they cannot stay longer in water at this early age without drowning. In ponds and rivers they are no doubt often supported by weeds just beneath the surface. They became perfectly tame within twenty-four hours, and liked particularly to sit in my hand and be gently squeezed. Under this pressure they dreamed, I suppose, that they were back beside their misty island, in the reedy swamp, beneath their mother's wing. They were very happy in the aviary where they could remain for hours provided the sun was fully on them, but if clouds appeared, it was necessary to remove them promptly to the kitchen range. Twice I forgot them for an hour or so after the sun was hidden, and by that time they were incapable of movement and almost unconscious, though they made a quick recovery. It was evident that they missed their mother, for they spent much time in trying to get under each other, or under the white Sparrow which had previously lived alone in the aviary. This Sparrow, which before their appearance had usually perched on the high branches, scarcely ever left the little Grebes during the hours they were there. Sparrows are not quite such adhesive little birds as Budgerigars, but they are so highly sociable that any friend is better than none. He joined the Grebes on the ground, pressing up against them, while the Grebes squirmed round and round trying to get under him. The floor of this aviary, which had been recently dug, was of dry soft earth, and it was soon covered by little saucer-like depressions where the three birds had performed their continual circular squirmings.

The Sparrow didn't like being perpetually heaved up from the ground, but for the sake of company he put up with it. Occasionally they would separate, and the Grebes then lay about in the strangest postures. Their legs, which are double-jointed, scarcely seemed to belong to them. I would see one lying still with one leg stretched parallel with the neck and pointing, we may say, due north; while the other leg, pointing due south, bisected the blunt end of the egg-shaped little body, and formed almost a continuous straight line with the first leg. Sometimes both legs would be sticking at right angles from the body, or again they would be twisted in such haphazard fashion that the birds resembled a child's broken toy cast away on the ground. Several times, at first, on catching sight of them lying still in this odd way, I thought they were dead. A large part of one side of this aviary was formed by a very big single window pane of our drawing room, so I could observe them comfortably whenever they were there. This might be for several hours on hot days, or only for a few minutes in bad weather. Moses, I felt sure from the beginning, was a male bird, and the other a female, and this was perhaps proved

to be true by the difference, which began about the tenth day, to show in their development. One morning I was surprised to see a little "ear" sticking out at right angles from the side of Moses' head. It had appeared during the night, and measured only an eighth of an inch in width and length. Its colour was much the same as the general body colour. By evening it had grown to a quarter of an inch each way, and next morning it measured half an inch in length and breadth, and lay at an angle of about forty-five degrees to its head. After that this ear grew very little, but on looking out of the window a day or two later I saw that Moses now had a bright pink patch on his head. I could not understand why I had not noticed it when I took him out of his flowerpot, but on going round to the aviary to look at this patch more closely I found that I was mistaken, his head being brown as usual. Next day when he was again lying quietly in the sun I saw the pink patch once more quite clearly as I thought, but again when I went round to him there was no sign of it. Convivial persons are not greatly surprised, I believe, when they see objects which are not actually there, especially objects of a pink colour, but to the sober citizen it is a disturbing experience. I got out my books, but could find no coloured illustrations of young Dabchicks. In *British Birds*, however, there is a good picture of young Great-crested Grebes, and these are shown with bright red patches on their heads. Returning to Moses I picked him up to make a close examination; ruffling up the down on his head. The mystery was then solved, for underneath was a brightly coloured patch of skin which only showed when he relaxed like an old hen in the sun. From this patch of skin coloured feathers must appear later, but this unfortunately I was never to observe. Unknown to me trouble had been brewing, for my wife informed me that Mrs. Smith objected strongly to poor Moses on account of his incessant piping. It is a fact that young Grebes are no more able to be silent than a musical box which has been wound up and set going. They often fall on their backs and struggle, sometimes vainly, to arise, like those crabs at the London Aquarium, which wear a tin hat on their backs and spend most of their time trying to put themselves right side up. So, too, the little Grebes, if kept on too level a surface. But while they lie kicking on their backs they still pipe on. Even when they go to sleep the sound continues, gradually fading as their slumbers deepen. Science, I believe, has never discovered what sleep is, or how it works. Someone had a theory that the body at the right time produces a sort of harmless narcotic. If so, this sweet poison of sleep must be like the hemlock that killed Socrates beginning its numbing effect at the extremities and spreading upwards. Thus the Grebes continue to pipe until sleep reaches their little throats half an hour after their legs have lost consciousness. But Mrs. Smith, it seemed, was demanding audience. Picking up Jourdain's *British*

Birds I entered the kitchen with a benevolent and conciliatory air. "Now, Mrs. Smith," I said, "I hear you object to Moses, but you are mistaken in thinking that he makes a horrid noise. I have here a book written by a very learned man, and what he says is practically gospel and cannot be contradicted. Listen to this, 'The young Grebes keep up a continuous dulcet piping like the jingle of far away silver bells.' Is it not a rare and particular privilege to do your cooking to the dulcet sound of distant silver bells? Or do you, I added severely, do you perhaps expect me to provide a whole orchestra to play you the nine Symphonies of Beethoven?" At this the old dame exploded in contemptuous cackles of witch-like merriment; but she was not disarmed. "The man who wrote that was dotty," she replied. "I say it is a most horrible noise, and I can't stand it." Her eye was indomitable, and with chagrin I saw before me the very embodiment of that Necessity with which the wise man nobly, and sometimes rapidly, agrees. It was settled that the large flowerpots should be removed by day, and replaced in future only at night. This was a disaster, for my amateurish incubator, made with a lamp, was no great success: the little female soon became weak, and in a few days she was dead, leaving me only Moses. He had always been extremely vigorous, and louder of voice than the others: he now weighed, at three weeks, a full ounce, while his sister never quite reached half that weight. He had achieved a fair steadiness on his legs, and developed quite a turn of speed as he hurried eagerly to meet me when I approached the aviary. He now began to think that he was too big a fellow to be cuddled by a Sparrow less than half his size and preferred his own company most of the time, but they remained very friendly. The Sparrow sitting at the side of the little pond seemed to admire all the diving and splashing of which he himself gave as fair an imitation as he could. But in popular esteem he had to take a very inferior position. Everybody was charmed by Moses and every visitor wished to see him, and was sure to laugh heartily when he was exhibited. Certainly we have had no pet that so greatly endeared itself in so short a time. Already I was wondering how to procure a mate for him so that next summer he might raise a family in one of the larger aviaries. But it was not to be. The other birds in the kitchen were now fully reared, and gone to aviaries, and it seemed that Moses now needed no more warmth than an ordinary room would provide. I decided, however, to let him sleep on the range one more night. Very early in the morning when I opened the kitchen door next day, I was met by a blast of hot air, and knew at once that a catastrophe had occurred. At the bottom of the cage I saw, shining upwards through the darkness, a patch of white. For once, once only in years, the perfect instrument had failed me, or had it? There was motive: there was opportunity; a hanging

matter according to the writers of certain popular stories. But I can never think that even the most witch-like old lady would commit so pitiless and Grand Guignolesque a crime.

Alas ! poor Moses. Deeply mourned, he now stands, with greater ease and aplomb than he ever achieved while living, in a glass case. When more important matters are forgotten we shall remember still that eager affection, that beautiful white waistcoat, and those double-jointed legs. Assuredly next summer when the south wind blows softly from the pond I shall listen for that "dulcet sound of distant silver bells", and, when I hear it, take down my landing-net and go afishing for Grebes.

* * *

BREEDING RECORDS TO DATE. PART VII

(Continued from p. 27)

By Dr. E. HOPKINSON, C.M.G., D.S.O.

PARROTS

(Broadtails continued)

BARNARD'S PARRAKEET (No. 405), *Barnardius barnardi* (V. and H.).

"Have been repeatedly bred both in England and France," says Neunzig (p. 741). Their breeding in France by Cornély is reported in *Bull. 1884*, p. 925, while the first recorded success in the U.K. appears to be Mrs. Johnstone's in 1902 (*A.M. viii*, 259, Medal). Tavistock bred them about 1913 (*A.M. 1913*, 301, etc.) and later, and others have done so since.

Hybrids

BARNARD'S × YELLOW-NAPED PARRAKEET.

Whitley bred this cross in 1927, and Page recorded the cross much earlier, and an example was exhibited at the 1906 C.P. Show (*B.N. v*, 24), but I know nothing further about it. The cross has also been bred *vice-versa*.

BARNARD'S × REDRUMP PARRAKEET.

Bred at the Zoo in 1933, and one young one reared, *teste* the REPORT ; I saw it flying in the aviary in August (while still in the nest one of the parents was supposed to be a Budgerigar !)

BAUER'S PARRAKEET (No. 407) ("Port Lincoln"), *Barnardius zonarius* (Shaw and N.) (*Baueri*, Temm.).

Bred by Kohler in Germany in 1879, and the young reared, *teste* Neunzig (p. 741) and De Brisay (*Dans nos Volières*, p. 310). In England the first breeder was Vane in 1927, when two young were reared ; *see*

A.M. 1939, p. 43. He bred them again in 1938. The subspecies *B. z. macgillivrayi* (North), the Cloncurry Parrakeet, was bred by Lendon in Adelaide, South Australia, 1940; one young one was reared from a second nest, see *A.M.* 1940, 91.

Hybrids

BAUER'S PARRAKEET × MEALY ROSELLA.

Bred by Waud in 1924, a first; four young were hatched, three of which were reared (*A.M.* 1925, 18). Two of the young went to the Zoo, where I saw them in 1925.

The cross with the male YELLOW-NAPED PARRAKEET is also on record.

YELLOW-NAPED PARRAKEET (No. 406), *B. zonarius semitorquatus* (Quoy and G.).

First success, the Zoo in 1912; Neunzig gives the date 1862, but that is an error.

Hybrids

YELLOW-NAPED × BARNARD'S PARRAKEET.

This cross has been obtained according to Page and Neunzig also gives it, but does not say which.

YELLOW-NAPED × YELLOW-BELLIED PARRAKEET.

Only authority Page's book.

YELLOW-NAPED × BAUER'S PARRAKEET.

Bred in France in 1882, *teste* Butler in his *Foreign Cage Birds* (ii. 227) and Neunzig, p. 741.

Crosses are also on record with males of the PENNANT, ROSELLA, and BARNARD'S PARRAKEETS.

BLUEBONNET PARRAKEET (No. 408), *Northiella haematogaster* (Gld.).

Cornély in France was probably the first to breed this bird (the red-vented form) in 1882, as is recorded in *Bull.* 1892, p. 523, and by De Brisay in his *Dans nos Volières*, p. 358. Neunzig (p. 746) says that the yellow-vented race has also been probably bred and Decoux (*in lit*) confirms this, writing: "There is no record, but I am sure it was bred by M. l'Abbé Leray before the war. He told me he had also bred 'hybrids': red-vented × yellow-vented." in the U.K. Duncan Parker was the first breeder: A.S. Medal, 1909 (*A.M.* 1911, 204, 376; 1912, 269), and they have since been bred by others: Tavistock, 1920 (*B.N.* 1920, 140), Whitley, and others.

The names of the two races are:—

Yellow-vented, *N.h. haematogaster* (Gld.) (*xanthorrhoea*, Bp.).

Red-vented, *N. haematogaster haematorhous* (Gld.).

Hybrids

BLUEBONNET × REDRUMP.

Bred by Whitley in 1931, *teste* Whitley in a letter correcting my mistake in *A.M.* 1933, 51, where I attributed a "Bluebonnet × Crimsonwing" cross to him.

REDRUMP PARRAKEET (No. 413), *Psephotus haematonotus* (Gld.).

Early records are to be found in *Bull.* 1865, 83, and 1870, 129; viz. Cornély in Holland about 1865 (? the "first"), and Rothschild in France in 1868. Among many British records are Farrar in 1903 (*A.M.* 1903, 407) and Read (*B.N.* 1912, 196); they have also been bred by many others, being usually quite easy to breed, and according to Neunzig "are frequently bred by the trade".

Hybrids

REDRUMP × ROSELLA.

Teste Page's Book. One was exhibited at the 1906 C.P. Show (*B.N.* v, 24), and I think another had been shown earlier (1903).

REDRUMP × MEALY ROSELLA.

Page's Book the only authority.

REDRUMP × BLUEBONNET

One was exhibited by Whitley at the Cage Bird February Show, 1925, and took a first prize, *teste* Seth-Smith (*A.M.* 1925, 107). It had been bred by the exhibitor we can certainly presume.

REDRUMP × HOODED PARRAKEET.

Bred at the Keston Bird-Farm, 1933, *teste* Seth-Smith, *A.M.* 1933, 366.

Crosses are also on record with males of the ROSELLA, BARNARD'S and BEAUTIFUL PARRAKEETS.

MANY-COLOURED PARRAKEET (No. 412), *Psephotus varius* (Clark) (*multicolor*, Kuhl not Gmelin).

Bred in France in 1876 or 1877 (*see Bull.* 1877, 481), and there is another French record (Savage) in the *A.M.* 1897, but the date is not given. The first recorded success in the U.K. was Farrar's in 1902: A.S. Medal (*A.M.* viii, 212; 1903, 407). Fasey bred them in 1903, *teste* Seth-Smith (*A.M.* 1903, 342), and another success (three young reared) is reported in *B.N.* 1915, 261. They have since been bred by others.

Hybrids with the male GOLDEN-SHOULDERED PARRAKEET are on record.

GOLDEN-SHOULDERED PARRAKEET (No. 410), *Ps. chrysopterygius* (Gld.).

A hybrid record only, GOLDEN-SHOULDERED × MANY-COLOURED PARRAKEET, which Page's Book records ; in 1901 there was another hybrid of this kind in the Zoo, but I know no details about it.

BEAUTIFUL PARRAKEET (No. 409), "Paradise Parrakeet" *Ps. pulcherrimus* (Gld.).

Neunzig (p. 748) says that they have been bred a few times abroad. According to Russ and Butler the first to succeed was Princess Saxe Coburg-Gotha in Vienna, in 1800. Gedney claims to have bred them in England about that time.

Hybrids

BEAUTIFUL × REDRUMP PARRAKEET.

Bred by Princess von Croy in Belgium *teste* Butler (ii, 230) quoting from Russ ; Neunzig (p. 748) confirms.

HOODED PARRAKEET (No. 41)., *Psephotus dissimilis* (Collett) (*cucullatus*, North).

First breeder, Astley in 1912 ; four young birds hatched in November, and all reared ; F.B.C. Medal (*N.N.* 1912, 327, 338 ; *A.M.* 1912, 73 ; 1913, 108). Tavistock bred them in the winter of 1933, three young being hatched surviving, but too weakly to leave the nest (*A.M.* 1934, 58) ; he bred them again in 1937, receiving the F.B.L. Medal ; see *F.B.*, March, 1938, p. 41. The Keston Bird Farm bred them with complete success in 1934, *teste* Sprawson in the *Foreigner*, 1935, 113.

In Australia, C. C. Burford bred them in 1934 and 1935 (see *C.B.* 1935, p. 116), and Mrs. Bonestell told me they were bred by Ralph A. Woods at Los Angeles in 1939, a first for the U.S.A.

(To be continued)

* * *

WAR AND OUR AVIARIES

By MAURICE AMSLER, F.Z.S.

Although we have all tried to keep up our pre-war collections of birds I doubt if there are half a dozen representative collections left in the whole country. It is also very doubtful if those of us who have collected and kept foreign birds will ever live to see the importations of the good old times. There is bound to be a long post-war period during which shipping space will be required for necessities and not luxuries such as birds and plants ; moreover, many of the districts from which we received our importations will be in such a state of chaos and turmoil that aviculture will be a very secondary item. My own birds have almost imperceptibly dwindled down to a few Pheasants, and it is with the intention of a short note on these birds that these notes are penned.

Of the small Passerines all have disappeared, not from starvation, I am glad to say, but from a lack of variation in diet, or from too coarse a diet.

My seed-eaters, for instance, had to be content with white millet only ; of this I had about 2 cwt. in the autumn of 1939.

The last to survive on this diet were some Blue-headed Parrot Finches, which I finally gave to a friend who had a more varied dietary in hand.

The soft-bills succumbed to a soft-food which contained too much starch ; for the other ingredients of their food, suet, honey, meat-meal, dried flies, etc., were difficult to obtain three years ago—and now, of course, quite impossible.

I cannot help wishing I had liberated all my birds in the late spring of 1940. All would have had a good chance of several months of happy freedom, and the hardier softbills, such as Ground Thrushes, Blue Robins, etc., might have survived for a season or two, though it must be admitted that the winters of 1940-1 and 1941-2 were extremely severe.

In happier times we all had our own special seed mixtures, more especially in the matter of Pheasant grain, and any deviation from our favourite recipe by the corn merchant was frowned at or even perhaps returned to the vendor. I have long since decided that these niceties were purely fads, and that most Pheasants will live, thrive, and even breed on practically anything which is edible.

It must be admitted that my collection at the moment can scarcely be called a representative one. I have two male Satyr Tragopans, one pair and two young Edwards, two male Mikados, and two pairs of Peacock Pheasants.

Their diet consists of one feed a day of what might be called garbage :

boiled potato skins, apple skins, a very few crusts of bread with the addition of some whole potato ; they also get a certain amount of green vegetable such as kale, cabbage, etc., which is given raw. All this food is given in a wet and unappetizing state, for it is, of course, impossible to obtain any meal, or even bran for "drying-off". Tragopans are notably somewhat particular as to diet, but against this we have the knowledge that they can subsist largely on almost any kind of fruit and also greens, incidentally they have a passion for nettles, a herb which most gardens can spare with advantage.

It is more surprising that the little Polyplectrons have survived, for of all Pheasants they are the least easy to get on to any kind of mash or soft food. Notwithstanding their war diet, both pairs reared young in 1941, and hatched, but did not fully rear, in 1942.

The Tragopans reared one chick in 1941, but last year my adult hen died on a nest of three eggs, and I should be deeply grateful to anyone who would care to let me have an adult hen in exchange for a cock. Mikados have lived on war-diet, but I have since lost my hen. Edward's have done well and a short description of their efforts may amuse other members, as it did me at the time.

Before the war it was my habit to set all Pheasants' eggs except those of Tragopans under bantams or light hens—since then rationing of poultry has made the use of fosters impossible. I have perforce allowed my Pheasants to incubate their own eggs, and the results have been quite encouraging ; of course the saving of time and labour is unquestionable. It is, after all, chiefly our greed and the hope for more eggs and chicks which prompts the use of foster parents. To return to our Edwards ; as is well known the male Edwards is a temperamental fellow and much addicted to kill any hen to whom he has been recently introduced. Remembering this and having a hen sitting on eggs last spring I drove the male into an adjacent aviary, my argument being that a bad husband would probably be a dangerous father.

In due course the eggs hatched out, the hen was an admirable mother always brooding her chicks if one approached her, and constantly hunting for titbits for her offspring which only received the very inadequate menu which I have already described. All went well for some days when my man was dismayed to find the hen walking about and no signs of any chicks.

A stoat or a rat must be the culprit, of that we were both certain, but on looking into the next aviary to see whether the cock was safe we noticed him squatting low to the ground, and approaching him to see what ailed him we were ruthlessly attacked by the old bird who at the same time exposed the whole of his young family which he had been so carefully covering. The explanation was that he must have called the young to him and that they had had no difficulty in walking through the dividing wire-netting.

After that we opened the door between the two aviaries and allowed the birds to share their parental duties, even so the male did more than his part.

A good deal has been written about home-grown seed. Sunflower seed and linseed for those birds which will eat it are easy enough, but to those who would grow their own millet and canary seed my advice is "Don't".

If one makes an early start, and if one has a good season, both canary seed and millet will mature in the warmer parts of this country, but to obtain a reasonable crop, say 56 lb. of either, is a big job and when it has been garnered your troubles are not at an end for the ears require threshing and the husks have to be winnowed away. I have seen keen aviarists doing this by rubbing the ears with their fingers and blowing the husks away. This is a slow, tiring, and breath-taking pastime. In a warm part of the country, with quite a reasonable knowledge of gardening, I have tried my hand and with a good deal of labour I obtained enough seed to feed, say, two or three Canaries or Budgerigars for a year or so, but only a drop in the ocean to what I really required.

As I have already pointed out sunflower seed is easily grown in sufficient quantities to keep one or two Parrots, whose diet can be supplemented by a few toast crusts, fruit, and greenstuff. An early start with sunflowers is a great asset in order to get well-ripened seed. The seeds may be sown outdoors, or they can be started in boxes and carefully pricked out 2 feet apart and 4 feet in the rows. It is a good plan to drive a few short posts along the lines to which a wire is stretched 3 feet to 4 feet above the ground. To this wire the plants can be tied to prevent them from being blown over. The harvesting of the seed-heads requires a certain nicety in choosing your time. If you can be bothered to protect each seed-head by a piece of muslin gathering can be deferred till the seed separates easily, but if not a sharp look-out must be kept for Tits and other robbers. As soon as their depredations are noticed the heads must all be cut off at once, they can then be hung up to mature in a dry and airy place, but even so one must look out for mice.

It may be pertinent to state here that the best possible bait for a mouse-trap is a sunflower seed, next a small piece of bread-crust, and last of all the time-honoured toasted cheese !

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EXPERIENCES WITH THE BROWN WOOD OWL

(Strix indranee indranee Sykes)

By W. C. OSMAN HILL, M.D., CH.B., F.Z.S., etc.

The Wood Owls of the genus *Strix* are the most typical members of the Order *Strigiformes* as is indicated by the fact that they have given their name to the whole group. There are about twenty species of them. One of these, the Ural Owl (*S. uralensis*) has recently been the subject of an interesting article in the AVICULTURAL MAGAZINE by the Marquess Hachisuka and it was this that prompted me to put on record my observations on the Ceylonese member of the genus.

They are represented in Europe by the familiar Tawny Owl (*S. aluco*) which, in one form or another, ranges eastwards into the Himalayas, where it is represented by *S. a. biddulphi*. Here it meets the range of another Wood Owl, which is similar in general form to the Tawny Owl, in so far as its main upper plumage is brown and that it lacks ear tufts, though it is larger in general bodily proportions. This is *Strix indranee*, of which the typical race is confined to Ceylon, the Deccan, and the hilly parts of South India. It is to this form that I shall refer below.

In Ceylon the bird appears to be moderately common from the coastal plain up to the altitude of Nuwara Eliya, the well-known hill station (6,000 feet); but it is confined to heavy forest-country and, like all Owls, is rarely seen in the daytime, and when it does appear attention is drawn to it by virtue of its being mobbed by Crows, Drongos, or other pugnacious birds. It is, therefore, seldom seen in captivity, but when it is, it makes a very desirable aviary inmate and never fails to attract attention and provoke remark from its beautiful downy plumage, blinking eyelids, and rich orange circumocular discs.

The general colour of the upper parts, including the crown of the head, is a uniform dark sepia or chocolate-brown, wherein it differs from the speckled plumage of the European species. The scapulars, wing coverts, rump, and upper tail coverts are paler and have narrow whitish bars. The flight feathers are dark brown with whitish transverse bars; whilst the rectrices are similar with narrow white cross bars and white tips. The underparts and legs are whitish to buffy or yellowish with very close brownish bars. Most characteristic are the ocular discs which are of a rich golden orange, but this is individually rather variable, though it may be due to sexual differences. There is some whitish colour above the eyes, and around the ocular discs there is a dark, almost black circle.

As with other species of the genus the eyes are very large and the ear openings are larger than the eyes and very asymmetrical, the right being larger than the left as well as somewhat differently shaped. These openings are provided with a marginal skin-flap or *operculum*.

The only sexual differences so far recorded are in size ; females being slightly larger than the males, as in the Tawny Owl ; but it is possible that specimens with less brightly coloured facial discs may be females, though I have as yet had no opportunity of confirming this by dissection or otherwise. So far I have seen only three specimens in captivity. Two of them have had bright reddish-golden discs and the third much duller affair.

Of the three examples with which I have had experience, one of the bright-faced ones has been to my knowledge at least four years in captivity, and the other slightly less. The former has been kept in Colombo, first in the Museum Zoo and later at the Zoological Gardens at Dehiwela. The other specimen lived in a comparatively small cage on a tea estate at an altitude of 3,000 feet in a very wet climate. The third specimen has been more recently acquired and is the one upon which I have been able to make more detailed observations.

A few days after receipt this bird refused to feed itself and gradually assumed the characteristic posture seen in Pigeons and other birds when suffering from peripheral neuritis resulting from deficiency of vitamin A, i.e. with its head rolled over to one side, and twisted spirally so as to face backwards and upwards. It seemed to lose all sense of balance and could not find its way about or feed itself. It accordingly was fed upon chopped-up meat and an occasional insect or piece of frog by hand. At the same time vitamin A-containing medicaments were administered over a period of two or three months without success. One day I was perusing the chapter on diseases in Tavistock's well-known book on Parrots, when I came across the section on labyrinthine vertigo, and it struck me that this was perhaps what our Wood Owl was troubled with. I accordingly looked down his huge ear-orifices to ascertain if there was any local irritation, but found nothing. The animal was perfectly easy to handle and did not make much attempt to struggle, merely showing some fright by clacking his bill a lot ; but, of course, one had to beware of his claws, for once a hold is obtained by these, it is very difficult to get them off again, and they readily penetrate one's finger to a depth of half an inch or more, leaving a very distressing perforation that can be felt in the depths of the muscles for months afterwards.

As no local trouble was discovered in the ears I concluded that the vertigo must originate in the internal ear (labyrinth) or in the brain. I excluded a cerebral origin by testing the two ear orifices with cold water instillations. I therefore adopted Tavistock's suggestion of administering potassium iodide internally and dropping a solution of iodine in glycerine into the ear passages.

The treatment took effect within about a week ; whether it was the internal or the external treatment that worked I know not, but the head gradually assumed its normal posture and, one night, I left

some food behind and behold next morning it had been eaten—after months of hand feeding ! Improvement continued till the bird fed itself entirely, and it was then let out into a large aviary. It relapsed, however, after two or three weeks, and treatment, with some hand feeding, had to be resumed. It escaped one night in this condition and was recovered by its being mobbed, two mornings later, by Crows. Its recovery continued, however, and for the last three months it has been perfectly normal.

It now feeds itself regularly, sometimes fasting for a night, but it has completed a moult and occasionally sings after the Owls' usual style of vocalization.

Incidentally it is this species which has been usually credited in Ceylon with the ear-rending shrieks of the " Devil-bird "—a cry which is supposed to resemble the wails of a human female being done to death and with which a curious piece of Sinhalese folklore is connected. But some authorities, like Spittel (1926, 1933) do not give credence to this, affirming that the Devil-bird is not an Owl at all but a Ceylonese Hawk-Eagle (*Limnatope cirrhatu ceylanensis*). This view receives support from the fact that no one has ever heard these unearthly cries from a captive Wood Owl. My specimen uses its voice but little, and then gives rise only to a low pleasant musical " hoo ".

I must conclude with a note on the feeding of Owls in captivity. Many imagine that fine-chopped meat, or even chunks of raw meat will suffice for captive Owls of the larger species. This is a great mistake, and was brought home to me very forcibly some years ago when I did a post-mortem on a Brown Fish-Owl (*Ketupa zeylonensis*)—not my bird I am thankful to say—which had lived for a couple of years on this diet. His gizzard was atrophied until it resembled a flabby brown paper bag ! Owls obviously need something coarse in their diet as is attested by their natural habit of regurgitating pellets containing indigestible material with regularity. Pellets of different species vary in composition, but usually contain tangled masses of hair, feathers, scales, elytra of beetles, etc. Accordingly I suggest that, in addition to raw meat, captive Owls should receive an occasional rat or squirrel, small birds, large beetles of the cockchafer type—but not cockroaches, as they are heavily parasitized—and frogs or lizards when procurable. In addition to the epidermal coverings found in such diet they would appear to derive great benefit from the material found in the alimentary canal and liver of their prey.

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NOTES FROM FOXWARREN PARK FOR 1942

By ALFRED EZRA

1942 has been a very sad year for me as I had to part with most of my beautiful rare Cranes and Geese. The large stock of food I had before the war lasted for three years, and I could not continue feeding the birds any longer. I am thankful to say that I was able to give them to friends who could keep and feed them, and that they were not destroyed. It took me just over twenty years to make this unique collection from all over the world, and it was sad to see them go. I bred a good many nice birds before they left, among them Ruddy-headed, Ashy-headed, Bar-headed, Ross's and Emperor Geese, some crosses such as Emperor \times White-cheeked and Emperor and Ross's. The full-winged Madarins and Carolinas bred as usual, and one still sees over a hundred of them on the ponds. The Red-breasted Geese laid with me for the first time, but they were disturbed when the birds were being caught up, and the eggs came to nothing. The Ducks on the small pond still do well, and I have never seen anything so hardy as the Eyton's Tree Ducks. I have eight of these since 1938 and they are all still going strong in spite of some very severe winters.

The Madagascar White-backed Ducks are doing well, and they have been here a good many years. I have only one Hottentot Teal left and four Versicolors. It is sad to see such a few birds, and the enclosure looks deserted. These are some of the birds I gave away which were in the enclosure : 7 Crown Cranes, 7 Stanley Cranes, 2 White-cheeked, 2 Sandhill Cranes, 25 Demoiselles, 1 Hooded, 4 Lilford, and 17 Sarus Cranes. These are some of the Ducks and Geese that are no longer in the enclosure : 6 Emperor, 5 Ashy-headed, 4 Bar-headed, 15 Ross's Snow Geese, 10 Red-breasted Geese, 2 Hutchins, 3 Orinoco, 8 Maned Geese, 7 White-winged Wood Duck, 50 Fulvous Tree Ducks, 10 Bahamas, 4 Barrow's Golden Eye, 14 Lesser Scaup, 4 Larger, 2 Red Shovelers, 7 Flamingoes. I did not know I had so many birds till I caught them up. No wonder the place looks deserted. I have kept the breeding pairs of Cranes. I also had to part with my wonderful herd of Axis deer as the ground they occupied had to be ploughed up. I was able to catch a few and send them to Whipsnade. The rest had to be shot. The black buck had to be reduced as their ground was also ploughed up, but I still have about twenty-five of them. The Wallabies are still here, and they want very little feeding. The Black-shouldered Peafowl flourish, and I still have a few white ones. I still have most of my aviary birds, and was successful in rearing a *Blue* Alexandrine Parrakeet in addition to some Lutino Ringnecks. The 'Queen Alexandra's have again reared five healthy young ones. The Chukors did better than ever, and I counted over sixty of them in my garden. They are delightful

and so tame. They always fly to the top of the house to roost. Only one Humming Bird left—a Violet-eared which has been here for over five years. The following Cranes were reared this year, two Stanley, two White-necked, two Demoiselles, and one Manchurian. This is the first time I have bred the Manchurian Crane. In my garden I have twelve Demoiselle Cranes. These I have had for years and are nice and tame. It will be nice when the war's over to see the place full of birds again.

SUBSTITUTE DIETS FOR INSECTIVOROUS AND FRUGIVOROUS BIRDS

By JEAN DELACOUR

After twenty years of collaboration in bird-keeping, the horrors of war and invasion brutally obliged Mr. F. Fooks and myself to part, abandoning to the enemy our beloved park of Clères and the innumerable bird treasures we had established and accumulated there—a loss which, I fear, can never be made good anywhere in the future. As soon as the war is over I hope very much to benefit again by his services, wherever I may be living. At the present time Mr. Fooks has taken charge of the estate and collection of Capt. the Hon. Henry Broughton, at Englefield Green. Captain Broughton, now in the army, possessed at the beginning of the war a large collection of perching birds, ranging from Humming Birds and Sun-birds to Birds of Paradise, Kingfishers, and Parrakeets, with many extremely rare species among them. The feeding of such delicate birds under the present food restrictions in England is a difficult problem, in fact most of such birds at the London Zoo did not survive the privations of 1940. But Mr. Fooks managed to keep those in his care in excellent condition, even rearing broods of the rare Rothschild's Grackle in 1941 and 1942 and having Touracos and Woodpeckers nest. On the diet of his birds he writes as follows :—

“ It gives me much pleasure in giving you a few details of a war-time method of feeding, etc. As you know, the maintenance of a mixed collection of birds in war-time, certainly has its problems. However, from my experience here, I should certainly revise my old method of feeding, if normal times were with us again to-morrow. I have most decidedly come to the conclusion that dried flies, dried ant eggs, and bananas (all expensive items) are unnecessary. With the exception of a few blackberries and elderberries, no fresh fruit or dried fruit has been used here for eighteen months or so. However, as you know, it is impossible to generalize in the feeding of frugivorous birds, as many of them are to a more or less extent, partly insectivorous.

Of course occasionally individual birds differ. For instance, a female Red-crested Touraco is particularly fond of gentils. She was the only Touraco to lay eggs this year. Furthermore, a male Turquoise Parrakeet would, I believe, if the opportunity was given him, live on nothing but mealworms.

"The composition of our substitute for fruit is simple—boiled potatoes and boiled carrot, 2 lb. of the former to 1 lb. of the latter, passed through a mincer then well mixed together and then 'dried off' with chicken or dog-biscuit meal. If properly done there should be nothing sticky or wet about this mixture, but should be fairly dry and crumbly.

"The 'Insectivorous mixture' is made up daily as follows : Scalded granulated dog or chicken biscuit, to which is added 10 per cent of meat meal and a little finely grated carrot.

"Touracos, Cocks of the Rock, Manakins, etc., are given the 'Fruit substitute' with a little of the 'Insect food' hitherto called No. 1 and No. 2. Birds of Paradise, Bowerbirds, Regent birds, Trogans, etc., three-quarters of No. 1 and one-quarter of No. 2, with a little finely minced raw horse flesh. A few mealworms or gentils, etc., when available. Cissas, Rollers, Magpies, Jays, Jay-thrushes, and the larger Glossy Starlings, seven-eighths of No. 2 and one-eighth of No. 1, with a little raw minced horse flesh added. As we breed a number of mice, we give them when possible, one each to most of the above, every other day. Rollers will take and appreciate small mice. We have a Lilac-breasted in wonderful condition. Naturally we give a few gentils and mealworms when available. Small insectivorous birds, No. 2 with a little of No. 1, to which is added a little finely minced meat (heart) and live food. Small Kingfishers (*Halcyon*), minced horse flesh (heart), gentils, and mealworms. Laughing Kingfishers and Frogmouth, mice and raw horseflesh. Note : All meat for insectivorous birds, including Cissas, Rollers, etc., is well mixed with biscuit meal and that given to small Kingfishers just sprinkled with it.

"I don't know if you will experience any difficulties in regard to seed, especially canary and white millet. If so I can assure you from my experience this year it is very easily grown, especially the former. Canary seed : Plant end of May or early June, in rows 5 inches apart, 1 inch deep. It is a good plan to plant five rows, and then leave a space of 1 foot. This enables one to gather as the heads are in the ripening stage without damaging the younger growths. Do not wait to gather until the heads are yellow, but when they are just on the turning stage. I then place them on the stands of a greenhouse (thinly), turning them every other day until the seed is quite hard. Millet : Sow under similar conditions during the first fifteen days of April. Gather the heads when just turning yellow and dry as for

Canary. They will also dry and harden if tied in small bunches, and hung in a dry shed."

It is quite remarkable to hear of such an achievement. Of course, much depends upon the way in which these substitute foods are mixed and it is all important that the mixture be always dry enough and crumbly.

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REVIEW

BIRD MIGRATION. By A. LANDSBOROUGH THOMSON, C.B., D.Sc.
Price 6s. Published by H. F. and G. Witherby, Ltd., 326 High
Holborn, London, W.C. 1.

In this second edition of *Bird Migration*, Dr. Landsborough Thomson has revised and brought up to date his book published in 1936. The author has that, unfortunately far from common, gift of a dead accuracy of detail, no matter how small, coupled with an easy interesting style which makes his writings most readable and impressive on the mind. He deals with a large and fascinating branch of ornithology from all its angles, and the book gives a comprehensive survey of the whole subject. The author opens with a brief historical sketch, mentioning the fantastic theories of where migrant birds passed the winter, and tracing the gradual development of the study of bird migration to the present time, when its importance is being ever more widely recognized. He continues to describe the different types of migration, directions, seasons, influences of weather, speed, causes and use of migration, and the experiments and work that are being carried on in various parts of the world to solve these problems. Particularly interesting is the chapter "What Guides Migration" in which he discusses visual recognition, flight without landmarks, "Homing powers," "Sense of direction," and the hereditary factor. The book is illustrated by 7 photographic plates and 13 maps, and a short list of general works on migration is also included. Though not perhaps of primary interest to aviculturists Dr. Landsborough Thomson's book should certainly appeal to all those who take a wider interest in birds generally, and presents a complicated subject in a concise and easily assimilated form.

P. B-S.

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NOTES

BREEDING RESULTS IN CHICAGO

Each year I tell you something of our breeding results, but there is very little to relate for 1942. Our Parrots were a great disappointment. Our old reliable Queen Alexandras failed us completely for the first time. They have raised for us thirteen beautiful young in the past four years. We noticed the female dragging her leg one day and on catching her up we saw that the foot was hanging by a piece of skin so that terminated any success from her. There were several eggs scattered about in the nest log. Abominably cold weather and much rain may have had something to do with the lack of interest shown by most of our breeders. 28th September had a temperature of 29 degrees while twenty-four hours later it was 72 degrees and the next day 82 degrees. All of our Parrot-like birds and many others as well had to be taken in three weeks earlier than usual. Our faithful old King Parrots raised three nice young and the Red-rumped Parakeets two. The Hawk-headed Parrots laid three eggs but they were clear, the Crimson-wings hatched two but deserted them after a few days—they were dead when discovered, and the same thing happened to our Swainson's Lorikeets. This is the first year we have not had at least two from them. Rosellas, Turquoisines, Bourke's, and Lories all were failures, and our female Eclectus died egg-bound. Four good blue shells came through all right but we accept them as a matter of course.

A pair of Silver Gulls raised a nice young one—they never have had more than one at a time. Two fine young Barnacle Geese and a hybrid Barnacle (male) × Canada (female), the mother being a very large bird. The young bird has the brownish colour of the Canada, but the black of the neck does not terminate as it does in the latter bird. Instead the black neck fades into slate colour on the chest (still sharply defined against the dusky under parts). With the exception that the cheek patches are like the Canada's the pattern is like that of the Barnacle Goose. There is also a narrow white line across the forehead. We also raised Black Swan, several Finches, outstanding of which were Cordon-bleus, and some Pheasants.

A very generous gift to the Society came from Mr. Edward Krug, who is also a member of your Society. His gift consisted of about eighty-five birds, many of which were new to our collection. Such as fine Callistes, Tanagers, Thrushes, Bulbuls, and Pittas as well as a number of the commoner aviary birds.

KARL PLATH.

AVICULTURE IN SOUTH AFRICA

Here in South Africa we are not nearly so hard pressed as you are in England, and we often wonder how you are able to keep your birds alive with the scarcity of seeds and other foods . . . Aviculturists in England have our deepest sympathy as do all the other people. Here, although we are very fortunate in that we have not experienced even one "air blitz", the war has, nevertheless, made itself felt. In Cape-town, for instance, commodities have become very scarce and many impossible to obtain, and all are three, four, and five times as expensive as pre-war. Bird seed is four or five times the normal price and very difficult to procure, especially in sufficient quantities for a large number of birds. Even seeds grown in this country, such as canary, have become scarce through drought in the land. Some seeds such as niger, Jap millet, and teastle, are quite unprocurable. In addition to these difficulties there is the question of insufficient time and a scarcity of labour.

I have to leave home early in the morning, and never know when I shall return, but it is never before dark, and I seldom see my home in daylight, and the birds can get no attention from me. Our bird attendant, after nearly fourteen years of faithful service, suddenly disappeared, and is now a prisoner of war in Italy, and we have been unable to obtain another all-time man. If we get the services of a man for one day in a month, we consider ourselves very lucky. So my wife has battled along on her own, maintaining law and order as best she can, but, notwithstanding her obstacles and difficulties, she has to her credit for the season nests of young Gouldians, Painted Finches, Bengalese, White Zebras, Transvaal Pretji Canaries (*Serinus angolensis*), Red-headed Parrot Finches, Long-tailed Grass Finches, and Star Finches. Others that bred and had young in the nest but did not rear them to maturity were the South American Red-crested Finch and the Red Hooded Siskin, a great disappointment, especially the latter. Two nests were made and young

hatched, but on each occasion, when a day or two old, they were carried from the nest and dropped into the water. We were hoping for better results next time, and had planned to separate the cock as soon as there were young in the nest, but, unfortunately, the little hen did not survive our severe winter, so we are left with the lone cock which ends our hopes of breeding Hooded Siskins for the duration.

Our latest acquisition is an Indian Shama (*Kattocinclla malabarica*), a really fine specimen and easily the most entertaining bird we have ever had. He is beautifully tame and confiding, and a great mimic and acrobat. He imitates the song of the Thrush, Blackbird, Nightingale, Skylark, Babakiri Shrike, Cape Robin, Fiscal Shrike, Yorkshire Canary, and many others too numerous to mention. He even imitates a puppy crying and a kitten mewling. He loves company, and is never too proud to entertain his admirers with something or other.

C. N. ABRAHAM.

THE PASSING OF TWO OLD FRIENDS

I have had the misfortune to lose my Rosenberg Lorikeet (*Trichoglossus rosenbergi*) through congestion and oedema of the lungs while on deposit at the London Zoo. I think my bird was the one in the Duke of Bedford collection in 1931. While in Mr. Partridge's possession he crossed the Rosenberg with a hen Swainson Lorikeet, which produced fine healthy youngsters; so far as I have been able to ascertain this bird has never been bred pure in captivity.

I have compared my specimen with the two specimens in the Bird Room of the Natural History Museum; it only differs from them in having its tail partly yellow, it being changed about a fortnight before its death. I hope when the war is won to obtain a true pair of these birds, so I may breed them in captivity. There is a fine plate of this bird in Mivart's *Monograph of Lories*, and another in a very scarce work, Rosenberg (C. B. H. von), *Reistoeken naar de Geelrinkbaai op Nieuw-Guinea, 1867-70*.

That exquisite gem, the Ruby Lory (*Vinia kuhli*) from Washington and Fanning Islands, another Zoo inhabitant, has also died; she was imported in 1935, and there is a coloured plate of this bird and article by Monsieur Delacour in the *AVICULTURAL MAGAZINE* for 1936. There are some living ones in Mr. W. Sheffer's collection in California. In the Bird Room of the Natural History Museum, there are three specimens of this bird.

P. H. MAXWELL.

* * *

CORRESPONDENCE

MEALWORMS

Dr. Amsler wrote some time ago, "There is no known substitute for mealworms," probably most bird keepers agree with him.

Looking to the future. Why should we in this country depend on foreigners to supply us with mealworms? Is it not possible for the Avicultural Society to get the societies working for the disabled members of the Forces interested in this trade? Probably the Dutch Embassy could find a Dutch refugee who was engaged in Holland in this trade who would be willing to act as instructor or manager. Failing this scheme could a small syndicate be formed to breed and supply us bird keepers direct; if necessary the trade could be supplied at a slightly lower price.

It was the members of the trade who opposed any scheme for home production in case of offending the Dutch breeders; in other words it would have put paid to the trade's nice little 300 per cent profit.

I am sorry to trouble you again in this matter.

W. A. JONES.

54 STOCKWELL PARK ROAD,
S.W.9.

[During the first month of war a meeting, instigated by the Avicultural Society, between representatives of the Society, other aviculturists, and members of the trade in bird foods was held in the offices of *Cage Birds* in order to discuss possible arrangements for conserving stocks of bird food of all kinds. A scheme for breeding mealworms in England on a large scale had been put forward by the Editor of the *AVICULTURAL MAGAZINE*, but this suggestion was entirely turned down by the trade on account of the "ample supplies procurable from Holland"; an argument which so tragically showed its futility within the space of a few months.—ED.]

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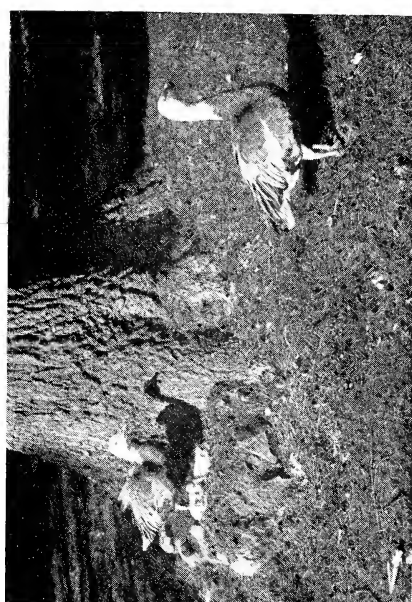
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MAY-JUNE, 1943

ARTIFICIAL GOOSE NESTS

AN EXPERIMENT ON THE BREEDING PSYCHOLOGY OF WILD GEESE

By JOHN BERRY

Although the True Geese do not display brilliant plumage or spectacular diversity of form, they make up for these deficiencies by their unique psychogony. One of the most interesting aspects of this character is the way in which Geese—either individually or collectively as a flock—may suddenly and unexpectedly change their hitherto regular habits. A surprising example of this occurred in a flock of tame Wild Geese at Tayfield, Fife, during the summer of 1942.

The Geese live in a park which is adequate for them throughout most of the year, but it lacks any ground resembling the nesting territories natural to most species. This was considered the chief reason why very few of the Geese in the park had ever nested, for in another collection of Geese kept in almost ideal natural surroundings not many miles away, breeding had been fairly regular. Because of wartime difficulties, some breeding pairs from that collection were transferred to the park in 1941, but it was not expected that they would continue to breed there. Moreover, in 1942, nesting seemed likely to be still further discouraged as the Geese were much disturbed by other purposes for which the park was being used. Also, the ground was unusually bare; following the severe winter, the grass was grazed as close as a mown lawn, and although in some places withered leaves had been blown by the gales into drifts feet deep, most of the park was swept clean. This, however, was not thought to be a factor of importance, since most of the Geese were tundra-breeding species which do not normally make elaborate nests.

Among the Geese who had lived in the park for several years was "Old Mother Goose"—a Caithness Greylag. She had proved herself a regular breeding bird and, following the usual habit of her species, had chosen to nest in thick cover. In 1939, her nest was made in a dense patch of rhododendrons in a plantation of Norway

spruce at one end of the park. In 1940, she nested in precisely the same spot, and although a different site was chosen in 1941, it was in the same corner of the wood. In each case the nest consisted of a large collection of withered leaves, spruce-needles, and moss, in which the eggs were never left uncovered. Conditions in the spruce plantation were unaltered in 1942, and there was therefore every reason to expect that "Mother Goose" would nest there again as in former seasons.

The first Goose egg of the 1942 season was found on 30th April. This egg was in a bare earth scrape, devoid of any nesting material, at the root of a large gean tree which stands in an exposed situation far from any bushes or other cover. Although the egg looked like that of a Greylag, it was difficult to believe that such a site could have been chosen by any of the Greylags in the park flock. An uncovered egg in so exposed a position seemed unlikely to escape for long the attention of Gulls, Crows, and other enemies. I therefore collected an armful of moss and pine-needles from under a Bhutan pine not far off, and at the risk of making the unknown Goose desert, covered the egg lightly and left the rest of the pine-needles near the nest in hopes that the Goose would make use of them herself. On the following morning, there on the nest was "Old Mother Goose"! She had used the whole of the material provided to make a large nest, and when she left it some time later, after laying another egg, the eggs were well covered in the usual manner.

This unexplained change of nesting habits on the part of an individual Greylag was to be followed by a collective flock reaction which was even more interesting. About an hour after "Old Mother Goose" had left her now conspicuous nest, attention was again drawn to it by the sounds of a fight. A Barnicle Goose, who had never before attempted to breed, was sitting on the nest endeavouring to resist the efforts of the rightful owner to drag her off, while the respective ganders were fighting furiously. Our arrival scattered the combatants and on going to the nest, I found that the Barnicle Goose had already laid an egg in it. As the Greylag would not allow the Barnicle to share her nest, I made another nest, as like it as I could, under the near-by pine tree, and in this I left the Barnicle's egg uncovered. I thought it just possible that when the Barnicle found herself driven repeatedly from the Greylag's nest, she might adopt the other similar nest in which she could see her first egg. But we were given no opportunity for studying the reactions of the Barnicles to the decoy nest, for they had not come back when a pair of Lesser Snow Geese arrived on the scene. The female soon noticed the egg in the artificial nest, and having called her mate, they began to walk round the nest and inspect it suspiciously from every angle. After the inspection had lasted for about ten minutes, the Goose

cautiously climbed on to the nest and sat down on the egg. She then began to pull the nesting material about, and made a real nest of it, Goose-fashion. It was at this point that the pair of Barnicles returned. The Lesser Snow gander saw that they did not come near the new nest, and after a battle with the Greylag gander, the Barnicles withdrew discomfited, and during the rest of the season they made no further attempt at nesting.

I had to leave home that night, but before going, I made five more artificial nests in the general neighbourhood of the first. These nests were mere hollows scraped out with a trowel at the roots of large trees, and provided with an armful of withered leaves, moss, and pine-needles, roughly in the form of a Goose's nest. On my return home for a day a week later, I was delighted to find that one nest had been adopted by a pair of Blue Snow Geese and another by a pair of Barnicles. Both females were sitting on the nests with their ganders on guard beside them. The material of the other three artificial nests was scattered about and beside one disarranged nest was an egg, cold and dirty, showing that the site had been adopted and then deserted. The Geese sitting on nests were being frequently disturbed by other pairs which seemed intent on seizing the nest by force, and violent battles were fought round the nests. In one of these, five pairs of Geese took part, and a Barnicle was all but killed by a Chinese gander who, during fifteen years in the park, had earned a reputation for extreme peacefulness even when guarding a family.

In an effort to stop this behaviour and to satisfy the apparent desire for ready made nests, I filled a large wheelbarrow with nesting material consisting of straw, hay, grass, withered leaves, moss, and pine-needles, thoroughly intermingled. With this I set about making imitation Goose nests in large numbers. The majority were at the roots of trees, but others were in cover, beside small bushes, and right out in the open, so that the Geese should have a wide choice of sites.

Among the Geese is an old and extremely tame Bean Goose. Although she had made no attempt to nest, she had already dropped three eggs at random. This suggested that probably none of her eggs would be fertile, but even so it seemed desirable that she should be encouraged to sit on them. I therefore made a large nest and left the dropped eggs in it uncovered, but she evinced as little interest in the nest as she had in the eggs lying in the open. More for the amusement of onlookers than with any expectation of success, I caught the Bean Goose, carried her to the nest, and dumped her on top of the eggs. This Goose is quite accustomed to being picked up, so she did not object to such treatment. But I was much surprised when, instead of at once getting off the nest, she sat down on the eggs quite complacently. She was, however, uncomfortable. She sat first one way and then another, and finally pulled my nest all apart and remade

an entirely new nest to her own liking, while her mate stood on guard beside her. In this nest she completed a clutch of five eggs on which she sat for many weeks, although, as I had feared, all proved to be "clears".

The reactions of the other pairs of geese to the artificial nests were watched with increasing interest. Some sites were overlooked, but others in more prominent positions were inspected almost as soon as I withdrew from working on them, and one Blue Snow had laid an egg in a nest within two hours of its construction. Quarrelling and fighting still continued to some extent, but since plenty of sites well-supplied with suitable nesting material were now available, pairs of Geese which were having the worse of an argument, seemed to prefer to inspect another nest rather than to force a decision through trial by combat.

I left home after my day of nest-making with hopes that many of my sites would soon be occupied by nesting Geese. Although these hopes were not altogether disappointed, the progress of the psychological experiment was seriously upset in an unforeseen manner. The end of the park in which most of the nests were made was within the range of wandering domestic poultry. The hay seed and some grain with the straw in the nesting material may have been added bait, but the hens soon decided that these nests were excellent spots in which to scrape for food, and any nest not occupied by a sitting Goose or guarded by her gander during the long hours of daylight when the hens were foraging, was soon completely scattered. Some Geese were seen more than once remaking their nests and collecting their scattered eggs. But the hens made more than half of them desert before completing incubation, and they were probably responsible for the failure to hatch of at least nine fertile eggs incubated for the full period. Yet the proportion of the Geese which had commenced nesting was larger than ever before, and it included five species, namely Greylag, Bean, Lesser Snow, Blue Snow, and Barnicle.

Apart from the Greylag "Old Mother Goose", all the Geese which nested did so in the artificial nests. The composition and quantity of nesting material were approximately the same in each case, but the nature of the sites varied considerably. Altogether fifteen sites were adopted, if only for a few days, out of about forty provided with artificial nests. It was, therefore, interesting to find that the only site occupied in or near any kind of cover was the nest to which the very tame Bean Goose was carried. This nest was in a clump of *Escallonia*, beside an elm stump.

With one exception, all the other sites adopted were at the roots of a large tree. The exception was a nest in a charred tree-stump right out in the open. This hollow stump was occupied by a three-year-old Barnicle Goose who sat on four unfertile eggs until they were removed

on 11th July. Although latterly two Pink-footed ganders were usually on guard near her nest, the Goose had no real mate, and she may have chosen this isolated site because there appeared to be no other competitors.

The trees at which nests were adopted were all more than a yard in diameter, so perhaps the sitting Geese like to have something large and solid behind them. But there was no noticeable discrimination as to the kind of tree or type of stem ; nor did the immediate surroundings of the nest seem of concern. Apparently the Geese were as well satisfied with a nest sunk in a deep recess between the sprawling roots of a giant silver fir, as with another raised a foot above surrounding ground-level on a mound of stones and turf beside the cylindrical bole of an oak. But it seemed evident that all the Geese preferred a site from which the gander at least could command an extensive view. No site where this was impracticable appeared to be considered.

While the Geese were sitting, their ganders remained on guard beside them and drove away all comers with reckless courage. The area guarded by the gander was large when the nest was isolated, but a pair of Blue Snows and two pairs of Barnicles which nested at the roots of three adjoining trees only short distances apart, seemed content to guard an area not more than fifteen feet in radius.

Perhaps the most interesting feature of this unusual nesting behaviour, was the way in which "Mother Goose's" nesting in so prominent a position seemed to have released the previously undemonstrated nesting urge of the other Geese. If their desire to nest had been subconsciously inhibited by the lack of suitably natural conditions in the park, this appeared to have been more than compensated by the sight of the nesting Greylag, and by the provision of the artificial nests. But possibly the construction of nests was less important than the convenient disposition of supplies of nesting material, for the previous scarcity of this may also have contributed to discourage nesting. On the other hand, there were at least a few suitable nesting sites at which material had been plentiful throughout. Under the Bhutan Pine, for example, there was a carpet of pine-needles, yet no attempt at nesting there was noticed until the construction of the first artificial nest containing the Barnicle's egg, which was almost immediately adopted by the Lesser Snows.

There is no knowing what nesting behaviour may obtain at Tayfield in 1943. But, if possible, the artificial nest procedure will be repeated and the reactions of the Geese watched with interest. Meanwhile, the owners of Geese which seldom breed may care to try the fantastic experiment of decoy nest-making, for themselves.

PERCHING DUCKS

By J. DELACOUR

In the *Proceedings* of the VIIIth International Ornithological Congress (Oxford, 1934), I have proposed a new classification of the Waterfowl (*Anatidae*). There I gave my reasons for separating under the name of Perching Ducks (*Cairininae*) a group of birds which had so far been scattered among the different subfamilies of Geese and surface-feeding Ducks.

Waterfowl of this group resemble Geese in certain ways ; they have a well developed thumb ; their claws are very sharp, and the tail is long and broad. They are brightly coloured, with a great deal of metallic sheen, and their legs are set more forward than in other Ducks. They all have the habit of nesting in the hollows of trees, often at a great height, just like the Golden-eyes and Mergansers, of which they are certainly close relatives. Their behaviour, actions, and display also are peculiar, very different from those of Geese and Duck of other groups. They all perch readily, and I have seen trees loaded with Spur-wings (*Plectropterus*) in West Africa. In Asia, the White-winged Ducks (*Asarcornis*) are usually found in tall forest trees during the day, as are also Hartlaub's Ducks in Africa and the wild Muscovies in Tropical America. The last three birds, as well as the Comb-ducks (*Sarkidiornis*) do not pair up as other waterfowl always do. On my ponds, where they were practically at liberty, males and females lived in flocks and the matings took place apparently without any personal selection, usually after violent pursuits and struggles.

The voice of these birds differs in the two sexes ; they are usually silent, the males being often almost mute. The chicks are easily distinguished in shape from all other ducklings, except Golden-eyes and Mergansers, in having a long tail, short legs set well forward, and very sharp nails which enable them to climb with great ease. They vary greatly in colour.

The Australian Magpie Goose (*Anseranas*) and the African Spur-winged Goose (*Plectropterus*) are the only long-legged members of the sub-family. They both love to sit in large parties on the small limbs of the tallest trees, usually choosing those bare of leaves.

I always kept some Magpie Geese, and I consider them quaint and interesting in spite of many faults. I must confess that they look rather ungainly ; they are rather susceptible to cold weather, and as far as I know they have never nested in captivity. Furthermore, I suspect them of eating eggs, as I found a pair one day foraging in the nest of a Coscoroba Swan, whose eggs had been broken. Otherwise, they are completely harmless to other birds.

I dislike Spur-wings intensely. I find them extremely ugly, with

their huge coarse feet and bill of a sickly purplish pink. All the males I ever possessed proved the savagest bullies one could imagine. One pair I received, of the pied race, which is also the most disagreeable of the two, started immediately chasing all other waterfowl, doing their best to kill them the very moment they were let out in the park. They were promptly removed, and later on I just occasionally kept an odd female for the sake of having the species represented in the collection. The black race is less ill-tempered and better-looking, but hardly worth keeping all the same.

Next to the Spur-wings, the Muscovies are the most dangerous Ducks in this group to other birds. I do not mean domestic Muscovies, that vilest of fowls, but the very handsome wild birds from Central South America, light of build, with hardly any coruncles showing, and clad in magnificent metallic green and purple. I possessed an excellent strain of them and bred a good many each year, but I had to keep them apart, three and four drakes and twelve to fifteen ducks together, as they are polygamous. They need a good deal of room, and mine shared a large field, crossed by a stream, with a pair of Manchurian Cranes and a herd of deer.

The White-winged Wood-duck (*Asarcornis*) is found from Assam to Indochina and Malaysia, never very commonly. It is strictly a forest species. Almost as large as the Muscovy, and of much the same shape, it is quaint if not really beautiful. It was very scarce in collections till 1934, when a good many pairs were imported into Holland from Siam. I brought over some myself from Laos in 1932, and Mr. A. Ezra received some from Assam at about the same time. We found them hardy and harmless on a large lake, but they never attempted to breed, although they mated freely. The only success with them was that of Mr. D. G. Schuyl¹ who reared five young in 1936, near Rotterdam, from a pair imported in 1934, and housed in a small pen. They did not breed again in the following year, and this record remains unique.

I never could procure any Hartlaub's Duck (*Pteronetta*), the smaller African representative of the two above species. It is a beautiful bird, rich chestnut with a black head and white forehead, and slate blue shoulders. One female brought from the Ivory Coast lived three or four years in the Paris Museum Zoo in the nineteen-twenties, and there was recently another specimen at the Antwerp Zoo. I never saw or heard of any more being kept in captivity.

Both Comb Ducks, the African-Asiatic (*S. melanotos*) and the South American (*S. sylvatica*) are very similar, mere subspecies of the same species; the former is slightly larger and lighter in colour. They are polygamous like the Muscovies. I found that if there were more or less the same numbers of males and females on the lake, the latter

¹ In *l'Oiseau* 1937, p. 171.

were persecuted and often killed during the breeding season, which occurs in the middle of the summer. I usually kept five or six drakes and twenty or twenty-five ducks. They proved hardy and fairly harmless to other birds in spite of their peculiar and rather aggressive attitudes ; but they did not really hurt anything, and it was all part of their display. Comb Ducks are poor breeders as a rule, and it was only in the summer of 1939, after almost twenty years, that my birds started to lay. Seven eggs were deposited in the nest of a Maned Goose located up on the hill in the corner of a small animal shelter ; they all hatched, and the young were reared. Later on we found that three belonged to the South American and four to the African-Asiatic race. Probably two females had used the same nest ; if only one had laid, she must then have mated with males of both forms, the young taking entirely from one or the other parent, as they did not show any intermediate characters.

Mandarins and Carolina (*Aix*) are too well known to be mentioned here at any length. We kept and bred many, and there was always a number of full-winged birds in the park. They belong most distinctly to the present group, as well in their shape as in their habits.

The Brazilian Teal (*Amazonetta*) is also one of them, a fact which has long escaped ornithologists. This charming bird did exceedingly well at Clères, proving hardy and prolific, and we reared a large number annually, over thirty certain seasons. There is a good deal of individual variation in the colour of both sexes, even in the same brood. I doubt that the birds described by Dr. Derscheid as Schuyt's Teal can really be recognized as a distinct species ; it may, however, be a local race. Although I tried with several pairs, I never found the Brazilian Teal to be a good stayer full-winged. It is a pity, as their outspread wings constitute their greatest ornament, being entirely glossy blue-green.

The last genus of the Perching Ducks (*Nettion*) is that of the tiny and short-legged Pigmy Geese or Cotton Teal, perhaps the most attractive and prettiest of all waterfowl, and certainly the smallest.

The Indian species, whose territory extends as far east as China, the Dutch East Indies, the Philippines, and north-east Australia, has often been imported. The late Hubert Astley kept for many years a pair presented by Mr. A. Ezra, who also has been the donor of most of the specimens that I possessed. They are extremely difficult to transport, and on account of their reduced size it is not easy to accommodate them, as they must be kept in vermin-proof pens. I tried many pinioned birds on the lake at Clères, but they sooner or later disappeared, killed by rats and other pests. When deprived of their power of flight, they fall an easy prey to them as they can hardly walk at all, and do not swim very fast. I found that they were doing best full-winged in good-sized aviaries enclosing ponds. Being naturally

shy birds, they must have a cosy, well planted run. Some large flights I had built over a running stream proved excellent for this species and other small Teal. They lived long there, and proved reasonably hardy in ordinary winters with no other shelters than open coops. Only in the terrible winter of 1939-1940 did they suffer. They never attempted to nest at any time, although the drakes took up regularly their breeding dress, called, and displayed.

I never could obtain the Green Cotton Teal, or Pigmy Goose, from Northern Australia and New Guinea, and I think that only one specimen was ever imported. It was brought over by Mr. W. Goodfellow, and lived only a short time at Walcot Hall.

On the contrary, I have been fairly successful with the lovely African Pigmy Goose, probably the most beautiful of all waterfowl, which has always been very scarce in captivity. It certainly is very hard to bring over and to accommodate. After unsuccessful attempts, Mr. C. S. Webb and myself landed three from Madagascar in 1929. In 1936 Mr. Webb brought a dozen more from the same place, and in between he also imported two or three from East Africa ; most of these birds came to Clères. We first tried to acclimatize them in indoor pens, but they very soon died. The last four pairs, however, arrived in perfect condition in wire-bottomed cages, and were released at once in one of the special Teal aviaries. There they did very well, living over three years. Once established they are rather stronger than Cotton Teal. Small seeds and duckweed are necessary to them. They proved hardy in normal winters, and they displayed and looked perfectly happy, but they never attempted to nest.

Now all these rare Ducks, well established at the cost of great pains, have disappeared, and I cannot help looking to the past with bitter regrets. I doubt that we shall ever see the like of it again. Only a few days ago, I was shown a coloured film of Clères, taken in 1937 by an American friend. All the wonderful animals and birds, the trees, the plants, the lawns, the lake came to life again for a few moments. It was sad to realize how little of it exists to-day, after fire, bombs, and invasion have each in turn destroyed a part of what I had taken so much care and trouble to build up. But, after all, it is the fate of all human enterprises in our dreary world.

I should like, in the end, to emphasize the importance for British aviculturists to keep up a sufficient breeding stock of the rarer waterfowl. The continental European collections have probably ceased to exist, and there are none in America quite comparable to those of the Old World.

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THE ESSENTIALS OF KEEPING AND BREEDING GESE

By J. C. LAIDLAY

Geese, like other birds, depend for their health on correct feeding, and though more easily kept do require a considerable area of grazing, and this is not so readily obtained as one might think, for they require the right type of grazing. This should be short old pasture in which wild white clover abounds; buttercup and plantains are also appreciated, and of course, this pasture should lie close to water. In winter if the ground be snow-covered to any depth, some species such as Barnicle, Brent, and Red-breasted, who probably depend more on grazing than other kinds, should have some ground kept free of snow; we used to run a snow plough over the grass and then brush it. Grit is, of course, as important as food, and it seems that Geese prefer very small grit, even smaller than that taken by Duck. Obviously water must be clean and fresh, and if these points are attended to, little else is required. If one wishes one's birds to nest, the question of nesting sites arises, a matter in which Geese are particular about; they look for and try to obtain the kind of nesting site they would expect to find in Nature. Our Barnicle, for example, always nested on the one length of fairly steep bank available to them; Blue Snow nested in the open, often on the barest of ground, but Grey Geese would nest in fairly rough cover, generally near to some low bushes, and so on.

Usually the nest of all Geese until the clutch is completed is the barest scrape, and as the eggs are laid, more and more grass is laid over and round the eggs. I remember once a visitor wished to get a photograph of a Blue Snow's nest in which, if I remember rightly, only two or three eggs had then as yet been laid. The site was at the edge of a path worn in rather short grass; I pointed it out, but so well was it concealed that he could not realize where it was until he put his foot into it, fortunately only breaking one egg. I myself remember the first nest we had of Cackling that was so well hidden we did not find it until the Goose started to incubate, though it was very much in the open and at a place that several of us passed daily. On the other hand, some nests, such as those of Canada and Cereopsis, are often very conspicuous. If one allows the Geese to rear their own young the question of feeding does not arise, for they will take the goslings to the best grazing, from which one can learn much. Greylag when young are probably the easiest to cater for, as they seem to eat any grass if short and sweet enough, but some species are more particular, Barnicle look for and prefer wild white clover. Snows for the first two or three days will look for and catch a certain amount

of insects, and one Goose, a Blue Snow, who was allowed to rear her own brood once, I noticed kept her young more on the water than one would have expected where the young feed on water weeds. As the young grow and the season advances, goslings show a preference for the seed heads of grass, but we give no grain to any kinds until quite full grown; like adults, though, they require and consume quantities of grit. We found the best time to pinion young birds was on the day they hatched, as there is then no bleeding and, I think, little or no pain. The difficulty of allowing Geese to rear their own young is that if one has a number of breeding pairs with young, the parents will not allow broods to mix or even come near each other, and are very likely, indeed almost sure, to kill them; after a week or two the young learn to keep close by their own parents, but often they do not learn until too late.

If kept with Duck, the Geese will not as a rule disturb the Duck, with the exception, of course, of Cereopsis and Upland, two quarrelsome species who are best kept alone. I tried keeping Geese with various kinds of Swans—Mute, Whooper, Bewick, Black, and Black-necked—with varying results. Mute are hopeless, and to my mind should be classed as vermin; they will kill anything. Whooper did no harm, but then I never had a breeding pair, so possibly it was no test. Bewick in the spring started to kill the adult Geese, and did much damage. Black were a dubious proposition, some pairs were all right, others were not. Black-necked reared their young in a pen with several kinds of Geese who also reared their young, and the only losses were from Geese killing Geese. Geese during incubation vary in their habits, and it is difficult to be exact and sure in one's statements, but as far as I could observe the only two species that sat their full incubation periods without coming off the nest to feed were Bean and Barnicle, and possibly Cackling. Most of the other kinds would come off, but at no regular interval, and as far as one could observe, not even daily except in the case of Greylag, who did come off daily to feed.

We are often faced with the problem of hybrids; normally, if Geese are kept, even in pairs, this should not occur, but there are some closely allied to each other, such as Blue and Lesser Snow, White-fronted and Greylag, that are prone to cross. It is noticeable that such crosses or hybrids are seldom, if ever, an improvement in colour or shape on either parent. Only once have we had hybrids that were more beautiful than the parent birds, and they were not Geese but hybrids from an Egyptian gander and a Ruddy Shelduck; they were very beautiful, but such bad-tempered and determined killers they had to be destroyed. There are always exceptions to every rule, and such a case occurred when a Barnicle gander, one of eleven pairs in the enclosure, mated with a Greylag Goose, who also had a mate of her own; four young

were reared, intermediate in size of their parents, and in appearance rather closely resembling Canada. Illness in Geese is on the whole not to be expected, though after a very severe and prolonged winter one may have to expect some cases of avian consumption. The most dread disease we were afflicted with was cases of "feather eating mite" caught from the hens when birds were hand-reared or from birds brought from other places so afflicted. I found no real cure, unless at an early stage the eaten feathers and a safety margin round were all carefully picked off, a slow and laborious business, and one not pleasant for the bird. Last year a pair of Red-breasted had the complaint rather badly, and not wishing to handle and frighten them, I left them alone; after their moult in July-August the new feathers came, and showed no signs of being eaten, but just as I write I see a small bare patch again starting on the breast of one of them. Another possible trouble and rather difficult to overcome is that of the Goose who sits her full incubation period without feeding, and is naturally very weak when the young are hatched, and unable to stand up to possible fights, and lies open to avian consumption if bad or cold weather should follow her hatching. I lost a Black-necked Swan once who sat her full six weeks and never, that I could see, fed; she hatched and reared her young, but gradually got weaker and weaker until she died.

It has been my experience that if conditions are suitable, Geese reared by their parents and left full winged will stay where reared, and it is a very beautiful sight to see such birds flying round. When peace comes, so much has been planned and talked of to improve life in Britain, how nice a thought it would be if we could do likewise for some of our wild life! Surely there must be many who would like to see sanctuary formed where water and marsh could be stocked with just a few pairs of such birds as Greylag, Bean, and Whooper, which, if pinioned, would breed, and their young full-winged would remain and populate such areas! Can we not even hope for a few pairs of hand-reared Bustard again to start the lost race of what was one of our most beautiful and stately birds. Britain alone lags behind in such matters.

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PACIFIC WATERFOWL

By DILLON RIPLEY

The other day I had lunch with a friend of mine just back from the South Pacific war. He had spent a few weeks on Guádalcanal in the centre of that small but incredibly vicious turmoil. As usual our talk turned to birds.

"I was so surprised to notice some little brown Ducks in a marsh down near the sea," he said. "Cockatoos and megapodes look all right in that atmosphere, but somehow not Ducks."

The small island form of the Australian Duck, *Anas superciliosa pelewensis*, is found from Celebes, in the Indies, all the way to Tahiti, a range of several thousand miles. I remember spending a morning in a big swamp at the north-east corner of the island of Moorea, a few miles away from Tahiti. My young Tahitian guide and I crawled through a veritable morass of quaking mud and sharp projecting pandanus roots to come out finally on a shallow lake, long and narrow, covered with floating plants and logs and rushes, an ideal duckpond. My guide produced a small pirogue and with silent paddle strokes we eased out gently into the water.

It was one of those lazy summer mornings. The sun was just beginning to become hot. There was a slow buzzing in the air as of many sleepy satisfied insects, and far off I could hear a little wild rooster crowing in the underbush. Suddenly there was a swish and a patter, and then a whicker of wings, and there were my first Australian Ducks. They began to go up from all around us in the reeds. They marshalled themselves into a flock and flew up towards the clear sky, then turned suddenly and came down towards us with a rush and a whistle, only to veer off again and turn out toward the sea. Their green specula bordered with white glinted in the sun. I counted about two hundred as they went off in formation.

These little Ducks are not uncommon in collections, although they have never been very popular. For one thing the male and female are coloured alike, dull chocolaty-brown with paler brown cheeks and a black stripe running through the eye. The last gives them a curious masked effect. I have always liked them though, because they are graceful and pleasant little Ducks, and because they remind me so strongly of a certain warm and lazy morning on Moorea.

The most mysterious of all the Pacific waterfowl is Coues' Gadwall, *Anas strepera couesi*, only two specimens of which have ever been found, on Washington Island, more than six hundred miles south of Hawaii. The two specimens, the male type and a female, collected in 1874, are now in the U.S. National Museum in Washington. In appearance these birds are simply Gadwalls reduced to about two-thirds normal size. The plumage too is rather dull and somewhat

unfinished-looking. Washington Island is a marshy place only a few miles long, with a small brackish lake near the centre and a fringe of palms. Since the original pair of birds were discovered, several expeditions have stopped at the island, but no one has ever seen Coues' Gadwall again. Speculation is perhaps unprofitable, but sometimes it is irresistible. I often like to wonder how these birds ever came to Washington Island. It is my guess, for what it is worth, that these two specimens represent the last of a very small inbred breeding population of true Gadwalls which by an accident of migration had become established on the island. I suspect that their size and coloration are due to environment and inbreeding rather than to any genetic change.

It sometimes happens that migrating Ducks plummet down on to isolated islands in the Pacific. Mr. Charles Nordhoff told me, once that a schooner captain inbound to Tahiti from Flint Island, an isolated rock pinnacle three hundred miles or more north towards Hawaii from the Society Islands, brought him a duckling which he had picked up on the island. Mr. Nordhoff was able to raise the bird, and found that it was a Pintail, presumably from wild parents. If Pintails can fly so far south of Hawaii where they are in the habit of wintering, there seems no reason why Gadwalls should not be able to do the same thing.

The smallest of all the Ducks in the Pacific is the Laysan Teal, *Anas laysanensis*. It is also one of the rarest Ducks and may now be extinct. Laysan is in the western Hawaiian group, two hundred miles or so from Midway. Of all the plain-coloured Mallard-like birds, this I think would be one of the pleasantest in captivity because of the irregular white head patterns of both sexes. The rest of the bird is somewhat rusty with a deep green speculum. In size they are about equal to the Formosa teal. But alas, I am afraid that these birds will never be seen in an aviary. When Dr. Alexander Wetmore was on Laysan in 1923, he found only twenty birds. They were so lacking in power of flight that they were exhausted after flying one hundred or so yards; he easily ran them down and caught several by hand.

In contrast to the Laysan Teal the largest waterfowl in the Pacific is the Hawaiian Goose or "nene", *Nesochen sandvicensis*. This rare bird is supposed to breed now only on the island of Hawaii proper. In former times it was often kept in a semi-domestic state in flocks around villages, but now it is supposed to breed only at rather high altitudes, 3,500 feet or more. Mr. Lewis, who has a bird park in Honolulu, told me in 1939, that he estimated there were about five hundred of these birds left. He said that they lived mostly on the old lava flows where the grasses and berry bushes that they like grow. Their favourite food is the berry of a *Vaccinium*, called locally "ohelo". They have a very small clutch of eggs, sometimes only one.

Mr. Lewis had three birds about a year old which had been raised at the Park Service Game Farm. They were tame and friendly looking creatures, completely upland-goose-like in their behaviour.

In his *Checklist of the Birds of the Hawaii National Park*, published in 1941, Mr. Paul Baldwin says that birds may be seen commonly between 6,000 and 7,500 feet on Mount Mauna Loa, where in the winter and spring a small flock frequents a grassy strip of lava rock surrounded by rough barren. As this area is now protected there is some possibility that the "nene" (pronounced "naynay") will be preserved for a time at least.

Information on the present status of the Hawaiian Duck, *Anas wyvilliana*, is almost completely lacking. This is a small dull female-coloured Mallard which is now apparently very rare in the Hawaiian Islands. In the same publication, Baldwin says that small numbers of this bird may still be found on the main island of Hawaii at a place called Waiohinu. It is supposed to nest along mountain streams. This is a bird which has never been kept in captivity, and which I must say I think would be fascinating to experiment with. The male has an indication of the curled sex feathers of a drake Mallard and in general many of the characters of a Mallard in eclipse plumage. It is apparently a dwarfed island race of Mallard which for some unexplained reason, mutational or otherwise, has lost the adult breeding plumage.

An equally little-known Duck from the Central Pacific is Oustalet's Grey Duck, *Anas oustaleti*. This is a similar bird to the Hawaiian Duck, but somewhat darker in general coloration. Like the latter bird, Oustalet's Duck shows no trace of a Mallard breeding plumage, although Mr. James Greenway of the Museum of Comparative Zoology at Cambridge, Mass., tells me he recalls seeing a curious specimen in the Paris Museum which had a partial male Mallard plumage. Here again is a bird which has never been kept in captivity, and which would be most interesting to study. This bird is known only from the islands of Guam, Saipan, and Tinian in the Mariannes group, localities which are somewhat difficult to visit at the present time. It is to be hoped, however, that at some time in the not too far distant future, some of the ardent aviculturists to be found among the personnel of the United Nations Navies will have a chance to visit these interesting islands and have a look for this mysterious little Duck.

I cannot close without mentioning the Philippine Mallard, *Anas luzonica*. This is a really beautiful bird, uniform grey above and below, with the sides of the head, chin, throat, and under neck a rich ruddy buff colour. The bill is lead blue. Male and female are alike in colour. I have never seen this bird in nature, but I was greatly taken by a pair in the Singapore Zoo run by Mr. Besapa. The price he wanted seemed high, and I did not buy them, an action which

I have regretted very much since. The only ones ever imported alive were those kept by Mr. de Laveaga in his aviary in California. They are extremely striking birds in captivity, and would certainly repay the trouble of importing them. The second time that I was in Singapore just before the war broke out, I saw the same pair, and was again tempted ; this time the price was higher, and I thought I noticed that the female kept one eye a little more closed than the other. And so I missed them again. The only thing to do now is to remember to get some the next time I am in the Philippines !

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A COLLECTION OF WILD GEESE

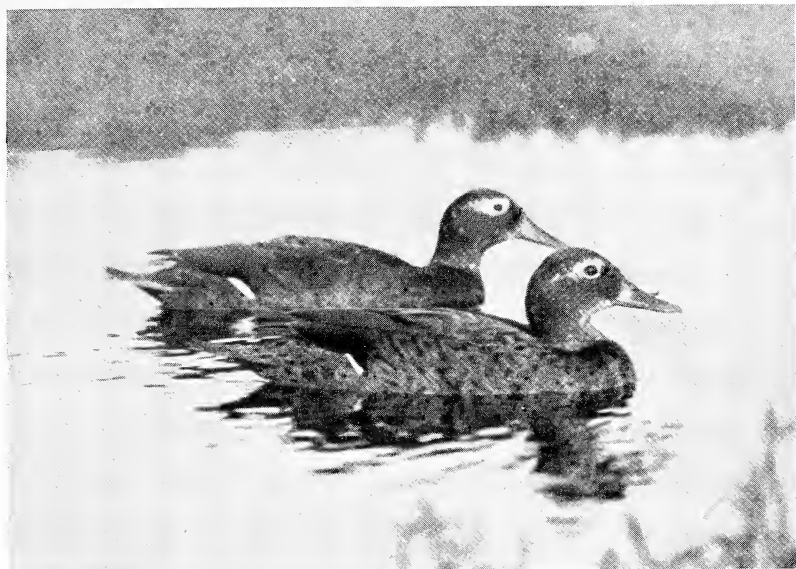
By GAVIN MAXWELL

I began my collection of wild Geese with a pair of Pinkfeet which I had seen advertised in a weekly paper. At that time I had no idea of trying to form a collection, merely thinking that it would be pleasant to have a pair of tame wild Geese. Having had no experience of Geese in captivity, I did not know that from this point of view Pinkfeet were the least suitable of all species. The Pinkfoot in a collection with a thousand other birds remains at heart the same Goose as in earlier days of freedom, keeping to the very centre of the fifty-acre black potato field on which he feeds, displaying the same wariness and watchfulness to the end of his days ! Most other Geese, though remaining essentially suspicious, acquire a veneer of confidence, but in my experience the Pinkfoot eyes man with distrust and antagonism from his first day in captivity until his last.

The two Geese were installed upon a small pond and, though they refused to become very tame, they sometimes called, and their voices were music that brought back a thousand lonely hours on salt-marsh and on tide. The next addition to the collection was a wing-tipped Greylag, which escaped during his first day in captivity. In answer to the offered reward he was returned by a local shepherd, but escaped for the second time the next day, and was never seen again. After that the collection stood still for a time.

Some months later I imported a pair of hand-reared Bean Geese from abroad, and realized just how tame a " wild " Goose could be. (The Continental dealer wrote : " Very tame, often feed by hand "—and they did.) During the next winter I added ten wing-tipped Greylags, and I thought then how pleasant it would be to have a great many Geese close to the house.

Most of the Greylags flew away sooner or later. I have always had an unreasoning dislike of pinioning adult birds, so I allowed their flight feathers to grow after the moult, and I suppose that I was



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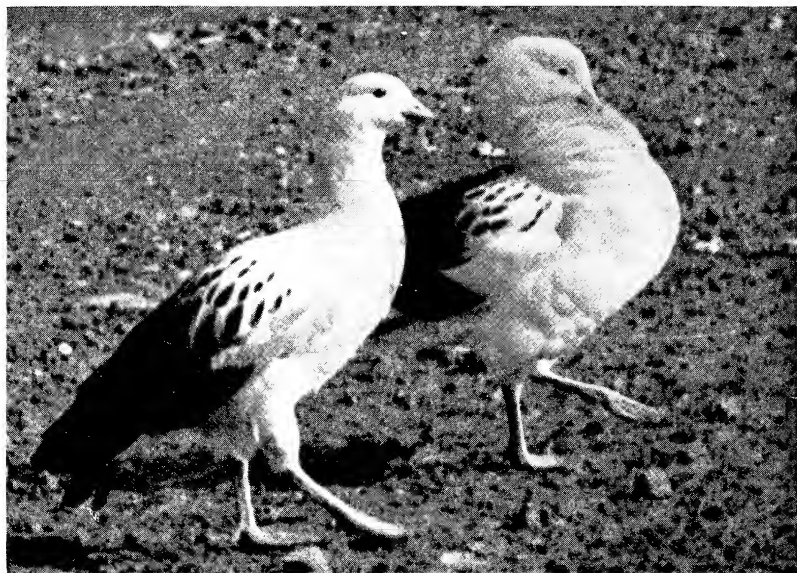
LAYSAN TEAL (*Anas laysanensis*).



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[Dillon Ripley

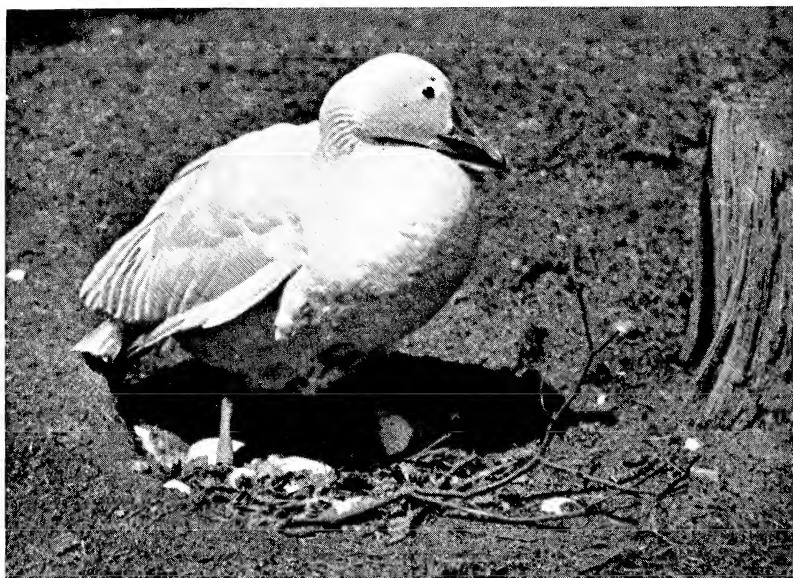
“ NENE ” (HAWAIIAN GOOSE) (*Nesochen sandvicensis*)



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[Gavin Maxwell

ANDEAN GEESE COURTING (*Chloephaga melanoptera*)



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[Gavin Maxwell

GREATER SNOW GOOSE ON NEST (*Chen nivalis*)

repaid by their morning and evening flights. They were tamer, if anything, after their powers of flight returned, and at feeding time would come sailing in to alight among the pinioned birds feeding at my feet. But when the migrating Geese came back in autumn to the salt-marsh, seven of the ten returned to their old life. Not all were shot, for in May of the next year three Greylags came back into the pen, not much wilder than they had been six months before. I made up my mind to pinion them, for I did not imagine that the other four had been alive to take the northward flight to their breeding grounds.

During the next six months all the British species were added to the embryo collection, and some of the commoner foreign ones. It was at about this time that I determined to try to form a complete collection of the wild Geese.

Looking back over notes, I see that during the first four years, while rarities were still absent from the collection, I had but one casualty among the birds. Aviculturists must envy this record ; but, as I was to find out, beginner's luck does not hold.

When the commoner species were complete, a list of desiderata began to form. This was divided into two categories—one that there was but little hope of obtaining, and the other that might be obtained with perseverance and comparatively large expenditure.

In the first category were certain sub-specific races such as Sushkin's Goose (*Melanonyx neglectus*), the several Eastern Bean Geese, the Tule Goose (*Anser gambelli*), and a few species that are either literally unobtainable, such as the Sandwich Island Goose, or cannot satisfactorily be kept in captivity, such as the Kelp Goose.

Into the second category fell such rarities as the Emperor (*Philacte canagica*), Ross's Snow Goose (*Chen rossi*), Greater Snow Goose (*Chen nivalis*), Swan Goose (*Cygnopsis cygnoides*), Redbreasted (*Branta bernicla ruficollis*), and a number of others. In the acquisition of these species I was almost immediately handicapped by the outbreak of war. During the "Bore" war period of 1939-1940, I would have liked nothing better than to import all the Continental dealers' stocks wholesale, and had someone been able to perform that miracle aviculture might have been spared some terrible losses. There seems now to be but little doubt that, as with mammals, certain species will rely only upon captive specimens for their continued existence.

For the fact that the collection does now hold most of these rare species, I have largely to thank the great kindness of friends, more particularly Mr. Alfred Ezra, of whose generosity the little flock of Emperors and Ross's Snow Geese are, among numerous other birds, a constant reminder.

Lesser Whitefronts (*Anser erythropus*), which appeared to be unobtainable from any dealer, necessitated a collecting journey to Finnmark,

their only extra-Russian breeding place ; and from this expedition I returned two months before the outbreak of war. I brought back with me one pair, leaving others to be reared under hens in Varanger, but it is most improbable that they have survived the German occupation. The pair with which I did return were extraordinarily tame, and have since become extremely and permanently aggressive towards humans—much more so, even, than the breeding males of S. American species or of *Cereopsis*. Unlike the latter, they attack with both bill and wings—both are surprisingly capable of inflicting injury.

Shortly before the war, also, a lucky chance enabled me to obtain a pair of Asiatic Greylags (*Anser cinereus rubrirostris*) which had come into the hands of a British dealer under the name of common Greylags. This subspecies is very rarely represented in collections, and I think that at the time of their importation there were no others in the British Isles. Six were imported, of which Peter Scott received two pairs and my own collection one pair. I do not know the wartime fate of his, but suspect the worst. My own pair has shown no inclination to breed.

It is interesting to note that the existence of the familiar typical Western form (*A. cinereus*) was denied by Alpheraky in his painstaking but somewhat unreliable monograph *The Geese of Europe and Asia* (1905). The only form familiar to him was *rubrirostris*, and he considered the discrepancies in description of specimens emanating from western Europe to be due to ignorant examination of skins in which marked colour changes had taken place in the soft parts. The most striking differences, however, do not lie in the orange bill of the Western form as contrasted with the pink of the Asiatic, but in the general plumage coloration.

All the subspecific races of *Branta canadensis* are now included in the collection, though *B. c. occidentalis* is represented by two males only, the solitary female meeting with an untimely death soon after she was acquired.

The acquisition of each new species has afforded me a pleasure which must be unknown to the collector who acquires his birds in bulk, as he would furnish an unfurnished house, but the losses have caused a proportionate despair. Six months ago the collection was as complete as I had hoped to be able to make it, the missing species and sub-species being numbered on the fingers of one hand. Since then a disastrous winter, during which almost every possible malignant factor took its toll, has caused the extinction of two species—Andean (*Chloephaga melanoptera*), and Lesser Snow (*Chen hyperborea*)—and sadly reduced several others. There are widows and widowers for whom it will be difficult to secure mates.

But it is not always the rarities that afford the greatest pleasure. Although the damage to crops necessitated a considerable reduction

in the full-winged flocks last season, those that remain are a never-ending source of enjoyment. They, together with a few pinioned birds of the commoner species, live upon a large loch, some three-quarters of a mile long by a quarter mile broad. As in the wild state, they flight at dawn and at dusk, and to hear the music of their calling and to see them black against a pale evening sky is a reward great for the small labour they incur.

As late on a winter's evening I was piling luggage into the car to return from my last leave, a small party of Greylags swept low over the house, calling as they flew—a pleasant valediction. I am concluding this article in a home-bound train, and at dusk to-night their calling will greet me again.

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THE SPINY-TAILED DUCKS

By JOHN YEALLAND

The *Erismaturinæ* or Spiny-tailed Ducks, are a curious and very interesting group of ten known species.

In appearance some of them are not unlike the Scaups ; they are of wide distribution, and possess a number of peculiarities—the stiff tail, large feet, and a rather heavy waterlogged and droll appearance.

The eggs of all species are large, and the shells are of a granular texture.

They are loth to fly, and do not go much on the land, but they are expert divers. Each species, it need hardly be said, is well described and portrayed in excellent plates in John C. Phillips's *A Natural History of the Ducks*.

Six species form the *Oxyurinae* :—

The White-headed Duck (*Oxyura leucocephala*, Scopoli), “of the Mediterranean basin, with distribution across S. Europe to India.”

The North American Ruddy Duck (*O. jamaicensis*, Gmelin), “widely distributed over North America.”

The Maccoa Duck (*O. maccoa*, Eyton), “confined to East Africa from the Cape to Abyssinia.”

The Blue-billed Duck (*O. australis*, Gould), also known as the Australian Ruddy Duck and Little Musk Duck, “one of the rarest of the Australian *Anatidæ*, appears to be confined to the southern half of the continent.”

The Peruvian Ruddy Duck (*O. ferruginea*, Eyton), “whose real home is the high plateau of Peru, where it is moderately common and breeds in considerable numbers on the Andean lakes.”

The Argentine Ruddy Duck (*O. vittata*, Phillipi), similar to the foregoing and “resident in the Argentine and Chile.”

The White-backed Duck (*Thalassornis leuconotus*, Eyton), “ranging from the Cape to Abyssinia and Loango as well as to Madagascar.”

The Madagascan White-backed Duck (*T. leuconotus insularis*, Richmond). The Madagascan form of *T. leuconotus*, which it much resembles.

The Masked Duck (*Nomonyx dominicus*, Linne), "of Central America. It is said to feed entirely on vegetable food."

The Musk Duck (*Biziura lobata*, Shaw), from "the southern half of Australia and Tasmania".

Only two or three species are, I believe, at all well known to aviculturists here: the Madagascan White-backed has been bred several times at Foxwarren Park (A.M., July–August, 1941) and it is interesting to note that the young were not pinioned and did not fly away—indeed it seems likely that, being so loth to fly, any of these Ducks could safely be kept full-winged.

The North American Ruddy Duck has been bred by Mr. Sibley and at Walcot Hall (A.M., April, 1938), and in this number of the Magazine the summer plumage of the male and the very peculiar display have been well described by Mr. Wintle.

The Musk Duck was kept many years ago at the London Zoo, and in early 1939 a pair arrived at Walcot Hall where, one hopes, they are thriving still.

Both sexes of this Duck have a wattle under the lower mandible, and the males, which are much larger than the females, are said to have a strong musky odour in the breeding season.

Three species, the North American Ruddy, the White-backed, and the Peruvian Ruddy, were successfully kept at Sterrebeek, where they thrived on a diet of soaked wheat (two parts), broken maize (one part), duck bread, whatever live food they found, and duck-weed, though I doubt if they ever ate any of this weed.

Three male North American Ruddy Ducks, a species said by Phillips to be "very difficult to keep in captivity and very difficult to rear", were in the collection for several years, and a single female was obtained in the autumn of 1938, but was, unhappily, lost during the very severe weather of that winter. We found these birds quite friendly even with small Teal, but they were inclined to quarrel among themselves during the summer, when they had assumed the red plumage and bright blue bills and were during all the hours of daylight displaying to one another.

During the summer of 1939 two of these Ducks took a dislike to the third, and chased and dived at him whenever he appeared above the surface of the water. He was never caught by them, and was not at all distressed, coming up for air in the most unexpected places and, if time permitted, he would even do a little display on his own account before being obliged to dive again.

We thought he might eventually become rather worn down, so we moved him to another place where he lived happily, displaying to almost anything, with a slight preference for Gadwall.

In writing of the display, Phillips describes "the large air-sac opening off the windpipe and lying between it and the œsophagus. This structure, which is present only in males, is used as a sort of sounding board during display, and seems to take the place of a special dilatation of the syrinx, the bulla ossea, such as is found in most male Ducks". Phillips says that "the clutch is irregular, ranging from five to twenty. Nests are poorly constructed and old Coots' nests are sometimes used". He adds, "Clutches deposited in layers are common," and that "another curious thing about the Ruddy is that not all the eggs found are in the same stage of incubation, and it is certain that the females lay more or less in each other's nests, for their nests are often close together."

We found that these birds did not go much on to the land, and that when they did they moved about with great clumsiness and difficulty. Because they prefer to escape from danger by diving rather than by flying, these birds have been considered by some to be stupid. This may, however, be a faulty judgment for, as we see in the case of the Grebes, an accomplished diver, not very strong on the wing, can escape much more effectively by diving than by flying.

Two Peruvian Ruddy Ducks did well in a small pond by themselves. I never saw them on the land, though they were obliged to go to the edge of the bank for their food. We grew three species of the hardy *Cypripedium* orchids quite near the water, and neither they nor the other plants were ever damaged by these Ducks.

Neither showed the least sign of coming into colour, and were evidently females.

In sunny weather they and the White-backed had the curious habit of resting on the water with tails upright and spread fanwise, and the large feet thrust out from over the wing coverts, a quaint contortion designed, no doubt, to give the feet a little sun and air.

Two White-backed also lived alone on another small pond. They were never seen to display, and as they were so exactly alike and had no eclipse plumage we could not be sure of their sexes.

Their curiously marked plumage rendered them scarcely visible against the stems of the reeds in their pond, and even the colours of the bill were so broken up that its shape could not easily be discerned against such a background.

These birds seemed rather pugnacious, quickly driving off full-winged Tree-ducks that came to the pond, and they would open their beaks at us if we passed too near, but they were always ready to dive with all the dexterity of Grebes, coming carefully to the surface close by the reeds. They did not damage the water-lilies in their pond or the plants on the banks.

MISADVENTURES IN WATERFOWL REARING —1942

By C. L. SIBLEY

We in America are fortunate that a great ocean separates both the East and the West coasts of our country from the immediate scenes of the world conflict in which we find ourselves embroiled. We have not been bombed, to date, nor have alien armies ravaged our countryside. For these and many other blessings, we praise God. Since 7th December, 1941, however, America has been actively at war, and the task of aiding its allies with food, munitions, ships, and all the complicated and expensive gear and tackle of war, plus the tremendous needs for America itself to wage a successful struggle, has taxed even the almost limitless resources of this great land.

Getting together, outfitting and training the enormous army of eleven million men, which is the task of this country, means that every able-bodied man, woman, and child over fourteen or fifteen years of age has had to more or less discard his everyday life, and gear life to the needs of war.

War plants have taken their millions of men and women from every walk of civilian life: butcher, baker, and candlestick maker, as well as doctor, lawyer, merchant, chief, and not excepted are those fine men and women who have devoted their lives to breeding, keeping, and rearing ornamental birds of all sorts.

At first when our men went into the Services or into war plants, we were able to get women to carry on after a fashion. As war has become more complex, women are not available, for young and old are needed in war work. Consequently those of us with bird collections have gotten along as best we could under great handicaps. During the last year protein foods have been vanishing from the market, and while there is still an abundance of grains for even ornamental birds, such things as cod liver oil, meat, and fish meals, dried milk, etc., have become as extinct as the Dodo, and one has to make shift with such ingredients as he can obtain.

Between insufficient and inadequate help, curtailed rations, the demands of war work for the owner, and no continual expert supervision, the past season has not held any outstanding successes in waterfowl rearing. This will be mostly a record of failures or near-successes.

The Winter of 1941-42 was unusually mild, and waterfowl came into the Spring in excellent condition for breeding. At that time also special food ingredients were still obtainable. The first birds to start breeding were the *Cereopsis* Geese. Having reared a number each year until we had accumulated quite a flock, we kept only one old pair of breeders, with a number of younger birds which were not

paired. Early in the winter the old pair nested, the female laying four eggs as usual. All were fertile, and all went well until one morning we found the nest abandoned and the eggs broken open and eaten. The culprit, a skunk, was trapped the next day at the opening in the fence through which he had managed to dig, but the eggs were done for, of course. This particular Goose has always laid two clutches of eggs, and within a couple of weeks of the skunk debacle, she started to lay again, and this time laid five. The snow got quite deep, so a box was put over her. Had we had, at the time, a broody hen, we should have taken the eggs and incubated them under the hen, but no hen was ready, so Mrs. Cereopsis was left to do the incubating. Sunnyfields is in the midst of wooded country where quite a lot of wild life—foxes, deer, owls, mink, etc.—are still to be found. After about two weeks of incubating we found Mrs. Cereopsis dead, with a hole torn in her side, and the eggs frozen. The culprit, a grey fox, which had climbed over a seven-foot wire fence to reach the nest, was also gotten, but too late to save the Goose and eggs. So 1942 saw no Cereopsis goslings, lovely tame fluffy little things. At about the same time two pairs of Black Swans were nesting. The eggs of one pair were infertile, those of the other pair hatched, and before we were aware of it, the anxious mother had literally crushed the babies to death in keeping them warm. A later brood from the same pair was raised under a motherly hen. Black-necked Swans laid at a very unseemly time, and the eggs were chilled so that they failed to hatch. They did not nest again.

Mute Swans, as usual, nested and were easily reared. In other years we haven't thought too highly of this, for the large importations by the bird dealers from Holland and Germany made them available at prices hardly worth the trouble of rearing. Now, however, they are in great demand with the European supply cut off, so we didn't begrudge them the time and effort to rear them, and they were taken off our hands as soon as grown.

Whistling Swans nested, and I think laid, but not in their nest. No young resulted, so we cannot be certain. A Whistling male mated with a female Bewick's of the *jankowski* sub-species, nested, and laid four fertile eggs. Only one cygnet was hatched and raised, apparently a female. It looks much like a young Whistling Swan, but with a somewhat larger yellow patch on the beak. Trumpeter Swans did not finally nest, although they carried great quantities of rubbish and piled it in several places, and we had high hopes. Whoopers, as usual, nested and reared their young without trouble. We have now no Bewick's male, and probably won't be able to obtain one until the war is won.

Geese were not too successful. We reared a large flock of Barnicles, and for the first time two young Tule Geese, which are a pair. The

Tule is a large White-fronted, migrating in winter to California, and given the specific name of *gambeli*. We had great hopes that our pair of the tiny little Richardson's Geese would nest, as I think them the only pair in captivity in this country. However, after making a scrape in the ground, and fussing about for some time, they did not finally nest, very probably because we had quite a number of breeding pairs of various Geese in their large field, and there was more or less fighting. I am more and more impressed with the fact that if one wants to breed wild Geese successfully, he should have separate enclosures of some size, for each breeding pair, with ample grazing and sufficient water facilities for mating, washing, and drinking, at least. In a mixed collection of breeding Geese, even though kept in a very large natural enclosure as are ours, there is always more or less bickering and the smaller and shyer species fail to nest. Other Geese reared, none of them of great rarity were Ross, Blue, Snow, White-cheeked, Pink-foot, Ruddy-headed, the usual Egyptians and Canadas, which are almost in a state of wildness and look after themselves. Lesser White-fronted and Orinocos laid unfertile eggs. We no longer have a true pair of Andean, Ashy-headed, or Chilean (as we called the Barred Upland), and Blue-winged failed to nest, as did Greylag, Bean, Semi-palmated, Spur-wing, and one or two other species. Red-breasted and Maned failed to rear their young, but the Maned redeemed themselves late in the season by nesting again and rearing two young, both males. Cackling and Emperors nested but before we could take the eggs to incubate, and rear them with hens, fighting Geese had destroyed them. We find that if the first clutch of eggs is taken just at the time the Goose starts to incubate, a second clutch will often be laid, and we either let the Goose hatch and rear these, or take the second clutch also in the case of a rare species, and give the sitting Goose some common Duck or Goose eggs to hatch, so that her maternal instinct will not be entirely thwarted. Crows got some eggs, as did some Cranes which were running with some of the Geese in the early part of the season, and with inadequate help we were unable to prevent this unhappy conclusion to a fond mother Goose's hopes (and I might add, our own as well). Magellan goslings were hatched out and grew like the green bay tree until they somehow contracted aspergillosis, with the result that all died. Our Chinese Geese undoubtedly nested, somewhere in a five-acre field, but try as we would, we could not find the nest, the birds were so adroit about hiding it, and later the female appeared after about two weeks, so something evidently went wrong. It may also have been laid at the door of a pair of Manchurian Cranes which insisted on getting out of their own enclosure with an eight-foot fence during high winds, and winging into that occupied by the Chinese Geese (and a few other sorts). By the way, this pair of Manchurian Cranes, received

from Japan in a group of eleven, as young, captive-bred birds in juvenile plumage, nested this past season when three years of age and reared two young, one to complete maturity, so we know that this particular pair at least reached breeding maturity at three years of age. We had no sort of idea at what age breeding began.

Ducks were almost a complete failure so far as rarities went. Quite a lot of the common sorts: Mandarins, Woods, Pintails, etc., were allowed to hatch their own eggs and rear their young, with quite a lot of resulting losses, but a certain number managed to survive and reach full-winged adulthood. As usual, the Shelducks of various sorts bred easily and well, and the young are always, it seems to us, very easily raised with even indifferent care. African Redbills laid three large clutches (one clutch of fourteen), and we reared several young. An Eyton's Tree Duck female laid over forty eggs, those first laid hatching some very weak ducklings, the later ones seeming to be too weak to hatch, and finally the germ just barely started to develop in the eggs before dying. Shells became progressively poorer also, in spite of the fact that the birds were in a natural pond with access to a limited amount of natural feed, and with all the artificial helps we could furnish in the way of diet. Late in the autumn the female died, but a *post mortem* revealed no apparent internal trouble. Some years ago we reared two young male Eyton's to maturity, and also lost that breeding female. Gremlins apparently play hob with other things than planes, and as we have no other Eyton's female, our breeding of this lovely species will have to wait until the war is past.

Crows, rats, skunks, and fighting accounted for a large number of ducks' eggs, for we had no trained man left to search for nests and collect the eggs as formerly, and also not time enough to incubate any but the rarer sorts under Bantams. Also, during the last two or three years, since it has been impossible to import any birds, some of our breeding pairs have been broken up by the death of one or the other of the birds, and we have not been able to get replacements. Then, too, waterfowl keeping is not common in America, and some of the smaller collections have not been kept up because of wartime conditions, and some have been dispersed because of lack of labour. There is no outstanding public collection of wild waterfowl in America, although since his connection with the New York Zoo, Mr. Jean Delacour has been able to add quite a number of desirable species to the Zoo collection, and given time, and an end of the war, it should become excellent.

One interesting nesting was that of a pair of South American Comb Ducks. The female is quite a tiny thing, yet she laid a rather round, and polished egg almost as large as that of a Spur-winged Goose. Unfortunately the eggs were laid rather late in the season after the male had apparently gone out of breeding condition, so were unfertile.

We had an interesting experience with the American Flamingo. For some years I have wanted to have some but their exportation is prohibited from the West Indian Islands where they are found, and although they have nested well and raised numbers of young at the Hialeah Park race track in Miami, during the last two or three years, these birds have not been available to the public. These lovely scarlet red birds are a dazzling sight when in full colour. In the spring of 1942, a dealer wrote me that he had two pairs available, but they were not in colour. I got a pair, and when I saw them, my heart sank, for they were almost white, even lighter in colour than our Chilean Flamingoes, of which we have several specimens. However, they were put into a muddy pond, with some natural food, and fed on dried shrimp, boiled wheat, and soaked dog biscuit containing about 30 per cent meat meal, also cod liver oil. Since the natural moulting season for this species is February and March, I did not expect any improvement in colour until the old feathers had been shed and the new ones acquired. Our surprise may be imagined, therefore, when these white birds gradually attained a coral pink colour, evidently by an imperceptible moult, and by autumn were only a shade less scarlet than the finest of wild birds. Encouraged by this, we obtained the other pair offered by the dealer, one a young bird in juvenile plumage, and they have responded in the same way. At this writing (2nd March, 1943), the four birds are undergoing the natural moult and apparently coming into full scarlet colour with their new feathers. So striking a bird is well worth the extra trouble of keeping it in colour, and we look forward to enjoying their beauty this summer in our ponds.

While not classed as waterfowl, one near-success we had with Cranes may be of interest. A pair of Hooded Cranes, acquired a few years ago and quartered in an enclosure of about an acre of not very suitable land, with a small artificial pool, surprised us by nesting. They have always been wilder than most of our Cranes, but became quite tame and aggressive very suddenly, evidently a prelude to nesting. One cranelet hatched naturally and the other was taken from the shell a couple of days later, and appeared to be normal. However, they appeared very weak, and could not be induced to eat, and forced feeding seemed to produce no results, so that both were lost. Now we have changed the adult pair to an enclosure with natural water and hope that nesting may be repeated this season and possibly young reared to maturity. We have digressed from waterfowl in this instance as the Hooded Crane has not before nested in this country, so far as we can ascertain.

This recital of failures and our high hopes for better success "next season", exemplifies the fact that if one has an inherent love of feathers, he or she will not be discouraged by persistent failure. Sooner or later (at least we always hope) will come that fortunate "break"

where we achieve success. Isn't it a blessing that there is a future for all of us to look forward to?

* * *

NOTES

AID FOR YOUNG WILD BIRDS

In view of the number of young wild birds which meet with mishaps each spring a series of suggestions for the care and feeding of baby birds that fall out of the nest, or otherwise get into difficulties, has been made by Mr. Lee Crandall, Curator of Birds at the Bronx Zoo, for the guidance of bird lovers in New York. Mr. Crandall's suggestions for temporary and emergency measures to keep very young birds from starving to death or being killed by cats and dogs are :—

1. If a nest containing young birds is blown out of a tree try to put it back in its original site. If the birds are very young the mother will probably continue to feed them; if they are almost old enough to fly they will probably refuse to stay in the nest. This is natural and nothing need be done about it.

2. If the nest is destroyed or helpless birds are found on the ground, they can be put in a substitute nest. This should be lined with something soft—cloth, cotton, or dried grass roughly shaped into the form of a nest. The purpose of this is to give the young birds' feet something to push against; if placed on a hard, flat surface their legs will spraddle and because of their rapid growth at this period will be likely to "set" in a spraddled position.

3. Young birds placed in a temporary nest should be covered with a cloth and kept warm, as they are used to being hovered by the mother and kept warm.

4. Baby birds must be fed at intervals of at least half an hour during the daytime. If they are very young they will open their mouths to be fed when their nest is jostled. Slightly older birds, getting on toward the flying stage, will be too frightened to open their mouths and their beaks will have to be opened by the fingers.

5. The proper method of feeding a very small bird is to push a bit of food into its open mouth by means of a smooth spatula or a pair of blunt forceps, or even by two small sticks held in "chop-stick" fashion.

6. Small birds should never be given water from a medicine dropper. When they are old enough to sit on a perch water can be offered them in a shallow dish. Small birds are quickly killed by water given them forcibly.

7. Young birds that are able to fly only weakly and are in danger from cats and dogs while on the ground may be placed in a tree out of harm's way. The parents will find them.

8. Birds assisted by their human friends should be turned loose at the very earliest moment, not only because it is illegal to continue to keep them but because they will become unable to find food for themselves if they are accustomed to being fed by hand. Normally the parent birds teach the young to find food, and human assistance is no substitute for the bird's own efforts.

* * *

CORRESPONDENCE

A BUDGERIGAR × LOVEBIRD QUERY

A correspondent inquires whether there is any authentic record of the successful rearing of Budgerigar-Lovebird hybrids.

I know of no record of complete success in Great Britain, and only one claim on the Continent, and one unconfirmed in Australia.

There is no reason to suppose that this is an impossible cross, but bearing in mind the very considerable differences in the breeding habits of *M. undulatus* and the *Agapornes* any reports, and they are but few, should be treated with considerable reserve.

The most likely species of Lovebird to nest successfully with a Budgerigar is undoubtedly the Madagascar ; and this cross is the one that has produced the only real "possible". Dr. E. Hopkinson, in *Records of Birds Bred in Captivity*, quotes Neunzig as recording this cross, and refers to *Die Gefiederte Welt*, 1890, p. 223. At that time *The Feathered World* was edited by Dr. Karl Russ, and under the heading Breeding Information, he writes—a somewhat free translation :—

"In the bird chamber of Baron von Grote is a very interesting hybrid breeding success. A communication from the gentleman mentioned gives a brief account of a hybrid between a Grey-headed Dwarf Parrot and an Undulated Grass Parrakeet hen or Budgerigar. The bird has the shape and markings of the Budgerigar, only the head, neck, and about half the upper surface exhibits the colouring of the young of the Madagascar Lovebird. It is very energetic and in good condition."

The description of the young would suggest that it was fully reared, and Dr. Russ seems to have accepted it as a fact.

The only British record of even partial success is that of the late Wesley T. Page ; writing on Madagascar Lovebirds in *Bird Notes*, 1918, p. 55, he says :—

"Later two more pairs (costing 3s. 6d. per pair) were put into the aviary, and though both pairs chose nest-boxes, and carried into them a huge amount of rubbish, I never found any eggs, then one of the hens died, and the cock mated up with an odd Budgerigar, and one young hybrid was hatched out and lived to leave the nest ; the next day it unfortunately got into the bath (a large shallow vessel only containing an inch depth of water) and was drowned."

It is a great pity that this unique youngster should have met such an untimely death.

In *Bird Notes*, 1911, p. 211, under the heading Editorial, appears the following paragraph :—

"Black-cheek Lovebirds and Green Budgerigar hybrids.—Our esteemed member, Mrs. Higginbotham, has four young of the above cross hatched out and doing well. The male of a pair of Black-cheeks forsook his own mate and paired up with the Budgerigar. Seven eggs were duly laid, of which four duly hatched out, both parents shared the duties of incubation. The Black-cheek feeds the Budgerigar on the nest but has not been seen to enter the nest receptacle since the hatching of the young. There are pairs of Rosella and Alexandrine Parrakeets in the aviary, but neither dare go near the nest while the Black-cheek is in the vicinity."

This "success" is included in the October, 1911, list of those qualified for the Foreign Bird Club medal.

Dr. E. Hopkinson mentions this cross in "Breeding Records to Date", *A.M.*, 1941, p. 89, and writes :—

"Nothing further appeared about this, and on inquiry Mr. Page replied that he had never heard any more about the matter. This record must therefore be disregarded."

The only other report I have seen appears in *The Foreigner*, 1939, p. 34. Mr. D. B. Bush, of New South Wales, mentions at the end of a letter, "Also a friend of mine has a young bird from a Peach-faced Lovebird and a Green Budgerigar." I wrote asking for particulars, but after some months my letter was returned marked "Unknown".

If any reader knows of other reports, I shall be very interested to hear of them.

ARTHUR A. PRESTWICH.

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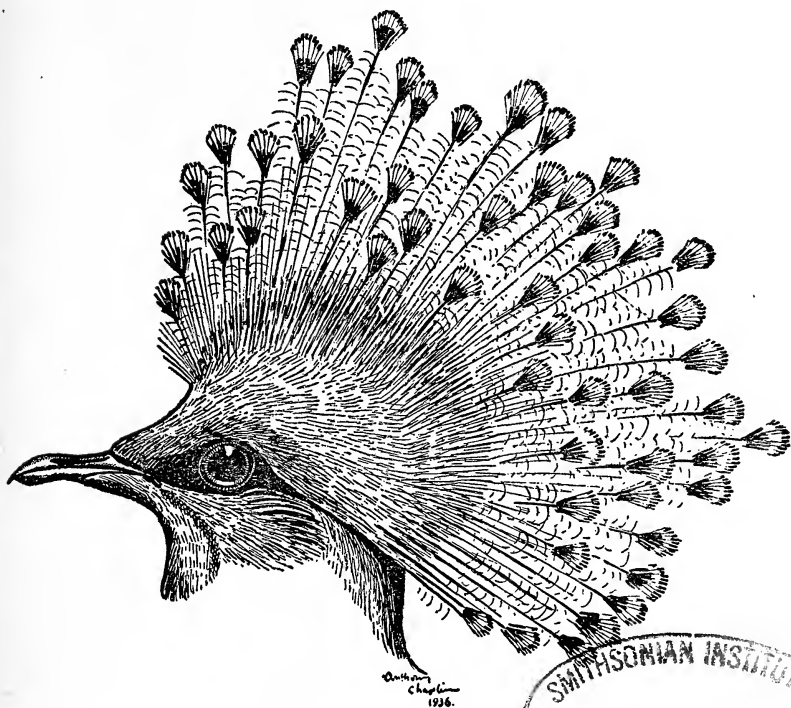
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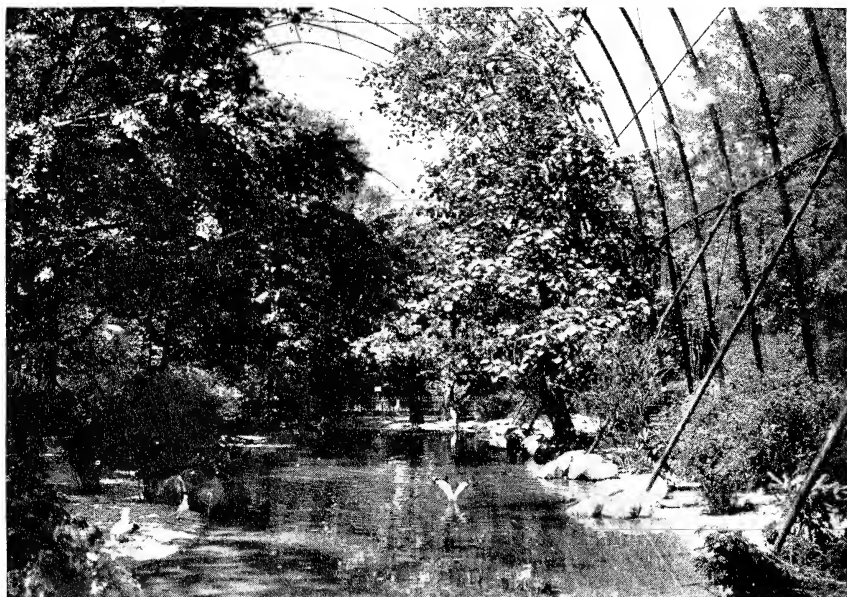
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THE GREAT FLYING CAGE IN THE NEW YORK ZOOLOGICAL PARK

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JULY-AUGUST, 1943

THE GREAT FLYING CAGE IN THE NEW YORK ZOOLOGICAL PARK

By LEE S. CRANDALL, Curator of Birds, New York Zoological Park

In 1900, when the great Flying Cage in the New York Zoological Park was built, it really was one of the world's wonders ; 150 feet long, 75 feet wide, and 55 feet high, its lofty arch enclosed several forested oaks, as well as innumerable lesser trees and shrubs, and a broad, L-shaped pool. Strange though it may seem to us the construction of the strong but delicate framework presented problems then not well understood and it was only after overcoming apparently insurmountable difficulties that it was finally accomplished. To-day our Flying Cage is still a fine and useful structure, though it is no longer the largest in the world. The original wire netting, of 2 in. mesh, long since rusted out, has been replaced with copper ; otherwise the exterior of the cage remains as it has been for more than forty years.

Not so, however, with the interior. In the course of years the shrubbery had become disreputable and the rather sketchy rock-work more or less broken down. In the spring of 1941 it became evident that something must be done, and with the co-operation of our old friend Jean Delacour, now a welcome associate, we set about doing it.

The cage had always been used exclusively for aquatic birds, most important of which were the Pelicans. Of these we had a really good lot, including the European White, the Eastern White, the rare pale grey Dalmation, the Florida, and the California Brown, the American White, the handsome Australian, and the prettily coloured Red-backed of tropical Africa. These Pelicans made a fine show at liberty in the great cage, which gave them ample room for making full use of their wide wingspread. However, it was evident that cover planting of any consequence could not be undertaken as long as the Pelicans were present, since their great feet would crush any but the most robust shrub. Therefore we finally decided that, with clipped wings, they should be removed to an otherwise unoccupied lake in the northern section of the Park. Here they make a really good show and have

almost paid their way through the sale of fish to be tossed to them by visitors.

With this accomplished we set about the rehabilitation of the cage. A number of large and ugly concrete blocks, which act as anchors for the heavy steel side braces, were masked with mounds of rock. The edge of the pool was similarly disguised, and a small island was provided. Since rather heavy shade and a considerable number of birds made it unlikely that grass could be maintained, we decided to create irregular islands of shrubbery and to cover the intervening open areas with round white pebbles. In these plantings various shrubs were used, and of these the best were found to be rhododendrons, mountain laurels, andromedas, and barberries. These furnish excellent ground cover without obstructing the view, and at the same time make a fine contrast to several tall oaks and sweet gums, and spreading elms, maples, and catalpas.

We next took stock of the remaining birds. It was obvious that we must remove any that might damage the new planting or that would interfere with the nests of others. This meant no large Ibises, Herons, or Gulls, and no Gallinules. With these eliminated we had only to secure a few small Ducks and to add some other odds and ends to provide a really good lot of attractive aquatic birds which would live harmlessly together, abstain from serious damage to the planting, and provide an exhibit of interest.

When finally assembled we found we had about 150 birds of nearly sixty species, which would constitute our summer exhibit. Roughly these included American, Snowy, and Buff-backed Egrets, a Boat-billed Heron, four kinds of small Gulls, Scarlet, White, and Guiana Ibises, Roseate and Yellow-legged Spoonbills, and a Buff-backed Trumpeter. Thirteen kinds of Ducks and seven of Pigeons added some attractive species. Gallinaceous birds were represented by Curassows, Chukar Partridges, and Golden, Amherst, Ring-necked, and Blue Eared Pheasants, and in addition there were Javan Peafowl (the cock a yearling !), and Vulturine and Crested Guinea-fowl. A dash of rarity was obtained through a Renault's Ground Cuckoo, a Sunda Island Coucal, and a Frigate Bird, the latter a particularly engaging bird. There were also two South African Black Oyster-catchers and a Water Stone Plover or Dikkop, both of which were represented for the first time in our collection.

Not a little experimenting was required to determine just which should remain and which must be banished. However, the final selection has proven satisfactory and there is no doubt that we all learned a great deal. Not the least of the additions to the sum of our experience was the fact that it is perfectly possible to operate the aviary throughout the winter months. There is no shelter attached and we had always removed the birds to a near-by heated building

early in October. We might have left a few hardy things outside, but had always been assured by our engineering department that the severe freezing of midwinter could cause cracking of the concrete pool if it were kept filled with water. Last autumn, however, we decided that since we had come so far we might as well finish it. In October we removed only the species known to be sensitive to cold and left a very considerable number of the hardier sorts. We introduced a small portable shelter—which nothing, so far as I know, ever used—and made certain of a strong flow of water. To the surprise of everyone a large section of the pool near the inlet was kept open by the combined action of the swimming birds and running water, even though there were periods when 30 degrees of frost were endured for several days at a time. Complete absence of damage to the concrete confounded our engineers and there was only one catastrophe—a lovely drake American Merganser (the American form of the Goosander) dived under the ice and was unable to find his way out, with the inevitable results !

So it develops that now instead of a mere summer exhibit we have one that extends the year around and the great cage no longer stands empty during the dreary months of winter.

* * *

RANDOM NOTIONS

By J. SPEDAN LEWIS

How will this war affect bird-keepi . .—I mean aviculture ? The war seems certain to hasten powerfully the tendency, that was already strong and fairly quickly growing stronger, towards equalisation of the good things of life, whereof among the chief are education, leisure, and spending-power.

Of each generation of the people of Great Britain some have a real bent towards keeping plants or animals merely for their beauty and other interest. But that impulse with all its possibilities of pleasure, not only for its possessor but for others also, may be thwarted by ignorance, lack of leisure or poverty.

Spread of education, leisure and spending-power, since it must diminish that thwarting, must increase the number of gardeners and of bird-kee . . .—I mean aviculturists.

So the war must hasten any growth that aviculture was destined to attain.

It must hasten also—and enormously—the development of transport by air. Managers thereof, whether they be minions of private enterprise, with humbly little “ m ”, “ p ”, “ e ”, or Public Servants splendid with the capital letters and other dignities proper to that estate, will want freight.

Moreover they will want freight of which the money-value is high in proportion to its bulk and weight. Birds of a stature downwards from, say, Parrots, should fill this bill well enough. The great difficulties of feeding on a long voyage would be cut out. Already before the war we had discovered how to provide for travelling apples a special atmosphere that suspends the process of their ripening and so of their decay. It seems reasonable to hope that, if now we give to birds a somewhat disconcerting demonstration of what flight really can be, we shall be able to give them also an atmosphere in which they can be safe and comfortable at levels above the Condor's range.

Let us suppose that there is a growth of the inclination to cultivate aves. Let us suppose that there is a growth in the extent to which aves are available for cultivation. These things, if they happen, will increase the need that there shall be available to those would-be cultivators knowledge and materials.

Let us hope that somebody or something will issue counsels complete and clear upon housing, feeding and so forth. Let us hope that the Avicultural Society will keep on this an eye and ear of owl-like quality and be instant to fill any aching void left by deficiency of other initiative.

Let us have definite specifications of cages, aviaries and diets. Let there be an Official List of Lunacies to be Avoided, including that which led more than one expert of the VERY highest rank to cause a simple soul (the writer, as it happens, of this paper) to invest sums, whereof the memory is an abiding agony, upon digging two-foot trenches around four large blocks of aviaries and a vast duckery because, said the experts, thus and thus alone can Man exclude from aviaries certain forms of life inimical thereto and, worst of all, the Brown, Norway or Hanover Rat.

Let us suppose that the habitations provided for the aves are not too far wrong. There will remain food. Upon one notable element in this the fifty-fourth page of this latest year of our Magazine has under the title "Meal Worms" a weighty letter from Mr. W. A. Jones.

These are not times when one can lay schemes even with such small confidence as is normally possible to Man. But, subject to those vast uncertainties, I have some hope that after the war the Leckford Bird-Farm may be in this way of some use to British Aviculture. I will not go here into details, but it is a fact that a lady, who in the study of entomology attained high academic eminence, wrote to me some time ago that she expected to be able to see her way to play after this war in a certain plan such a part that, when in taking visitors through the aviaries here I allow myself to make for the umpteenth time what is, I am afraid, my favourite remark, namely, "I bred it," she will be able to add in a tone that will be, I gather, delicately but definitely superior, "I fed it."

The plan may come to nothing, but at present we are seeing visions and dreaming dreams of an elaborately scientific plant for the production of a beautifully even output of meal worms and of some others of those forms of life whereof the main function in the Scheme of Things is to be eaten.

Here there may be, I conceive, scope for experiment. It seems very unlikely that the larva of a particular beetle is so near to being the whole bag of tricks. But we shall see what we shall see.

One notion remains before this writer will have done all, that on this occasion he can, to assuage editorial esurience. It is this. Suppose that among other innumerable consequences of a general spread of education, leisure and spending-power there is a great growth of aviculture. Will this lead to a great lengthening of the range of species that are kept fairly generally? Or shall we find that aviculturists break into separate groups, on the one hand a smallish group of those inclined by temperament either to keep a great variety of species or else to choose one or more that are not kept commonly, while on the other hand a separate, far larger, group will devote themselves to keeping one or more of the species on a pretty short list? The Canary, the Budgerigar, the Guinea-pig, the Goldfish, and some few other animals, and in the vast vegetable world a mere handful of species have special attractions that others apparently have not.

If so, will that list slowly grow? Will it come to include the Mandarin Duck and the Chiloe Wigeon, and among game-birds perhaps, if we can only get really strong domestic strains, that extremely attractive genus, the Tragopan, with its no more than five species, so satisfactorily distinct, so delightfully tame and all, it may be presumed, as ready to breed in captivity as are, to judge from experience at Leckford, the Crimson and Temminck's.

The Golden Pheasant and Lady Amherst's and Reeve's and Swinhoe's have reached this list already. The Mikado Pheasant seems likely to do the same. Will the Peacock-Pheasants—above all that supremely charming little fowl, Napoleon's? Pheasants, however, need space and waterfowl need water. More really important, therefore, are any possibilities of lengthening the list of little birds that thrive in cages or small aviaries and that in beauty and liveliness or in voice can give keen pleasure not only to aviculturists but to all and sundry who now and again will see or hear them. For it is surely not the least of the pleasures of our hobby that, like gardening, it adds to the general pleasantness of life for other people.

If anyone domesticates the Amethyst Starling as solidly as the Budgerigar, should he not be knighted? Would a viscounty be any more than a just expression of public gratitude to him (or her) that did the same for the Alexandra Parrakeet? And, when we think of some of the performances that have turned commoners into earls

should we not blush to offer a mere earldom to him (or, as aforesaid, her) that filled our homes with Bluebirds ?

* * *

BRITISH BIRDS

ADVANTAGES AND DISADVANTAGES OF HAND-REARING

By V. A. V. CARR

(Continued from Vol. VII, p. 116)

It cannot be denied that softbills make the most attractive and intelligent caged birds—if they are kept in suitable surroundings. Their very nature of feeding indicates a cautious way of keeping, and when once one has grasped that fact the attractiveness and intelligence of the softbill will be more readily appreciated.

In comparison with the larger type of softbills, i.e. Jays, Magpies, Fieldfares, etc., the smaller type, i.e. Nightingales, Blackcaps, Warblers, do not merit any hand-rearing as, comparatively speaking, the smaller species settle better—but one needs the heart of a lion to reduce an “aviary smashing” Magpie, down to a bird feeding on one’s shoulder uttering those peculiar little sounds that only come when complete confidence and respect reigns between bird and master.

To me the word “softbill” denotes a lot more than the actual confinement of such a species of bird to an aviary or cage. After the long dark nights of the winter months one begins to hear the Song Thrush singing his chant on an exposed bough competing lustily with another some distance away ; the Blackbird fighting angrily with another, crawling on the ground and facing one another like fighting cocks of the good (?) old days, and then up, down, snap, snap, and a handful of feathers remain to mark the spot where the combat took place.

The “Throstle” or better still Storm-Cock (or would you prefer Missel Thrush) can be heard with a melody more beautiful than any other—which makes one pause to listen and think of better days with green buds bursting in the warmer sunlight—with blossom blooms humming with bees doing their vital work of pollination and helping man to produce a crop of health-giving fruit. Such a melody rings with enthusiasm and yet, like the “red sky in the morning”, one must grimly remember in spite of the beauty of the song, this bird was aptly named “Storm-Cock”.

And so the days grow longer, the sun gets stronger, and the very earth smells of something more intoxicating than the most expensive perfume—until one hears “chiff-chaff-chiff-chaff”. At last the bird has arrived—all the way from a land far away, shouting his name so distinctly that one does not need to ask for his identity card. This

bird usually arrives in March and whatever the weather or however backward the season he comes and one wonders sometimes how he has acclimatized himself so quickly and whether the insects on which he relies for his very existence have hatched out in sufficient quantities to satisfy his healthy appetite. He is usually accompanied by the Willow Wren and Blackcap—both beautiful singers—and one begins to realize summer is not far off.

The Chiff-Chaff and Willow Wren both build very similar nests with eggs closely resembling one another. The nest is usually on the ground with a dome over the top and very cleverly camouflaged. The family reared in this nest is usually very large considering the size of the nest and the little birds' mouths wobble up and down, side to side, that it is extremely difficult to feed them artificially when at such an age. When they are reared they make marvellous little aviary inmates—so tame but, oh, so difficult to keep throughout this English winter without the aid of plenty of live insects and a little warmth.

The Blackcap is undoubtedly easy to rear and keep and becomes very confiding—singing lustily all the year with all the richness of the wild bird's notes.

Before one is fully aware the rest of the migrants are with us and it depends in what part of the country one lives what species can be seen.

The Nightingale—common in the south, some parts of the east, west, and midlands—can be heard eerily at night, and one wonders if there really are such things as ghosts until one appreciates that Mr. Nightingale has arrived in his old haunts, waiting for his wife, to build their nest with oak leaves and brood the olive green eggs to produce next year's songsters.

These birds I always consider exciting and interesting to watch in their natural state, but in captivity a certain amount of care is expedient as they are apt to be very pugnacious at certain times of the year with dire consequences for any tolerant inmate. If hand-reared from an early stage and given every attention until after they have moulted—not allowing them to get excessively fat—they make ideal birds and will sing quite nicely all through the winter months in artificial light. With other birds as companions or even within hearing the pureness of note so noticeable in the wild bird's song is lacking, which I always put down to the fact that the song is a conglomeration of all the other notes of other species. Sexing these birds is rather a difficult matter—the cock bird being the more active and not quite so light a brown on the breast and belly. Garden Warblers, Greater and Lesser Whitethroats are easily reared, but are not all that beautiful as aviary birds. I will make an exception of the Lesser Whitethroat, as he really is beautiful and quite hardy to keep. The beautiful grey colouring which constitutes his clothing stands out always, and this

bird's habits are very active and wiry. In natural surroundings you will see this bird creeping through thick hedges singing all the while and making his funny little "chur, chur" noise. The nest, made entirely of horse hair or other similar material, is very slight and usually to be found in the thickest of places.

The Garden Warbler is a very plain ordinary bird in appearance, but as a songster he ranks very high—his shrill, bell-like notes reverberating throughout the little spinneys and copses, sheltered in the sun. As a cage bird he is a disappointment, as he tends to put on too much flesh with its attendant evils of sore feet, greasy plumage, and brittle feathers. Mr. Greater Whitethroat is, in many respects, very similarly constituted, but adopts his natural posture of crouching over the perches, surveying one with a great deal of suspicion.

The Warblers are many and varied in colouring, disposition, and song, and some of them need expert attention and the most expensive of foods—alas not now readily procurable—in order to keep them in anything like the condition in which they are to be found when living naturally—and in these days of shortages and economies it is not fair to these birds to keep them unless one can be sure of giving them the varied menu which is indeed demanded.

I well remember finding several nests of Dartford Warblers over a large area of ground and I came away from that locality convinced they are not so rare as one is led to believe. Their songs are not unlike that of the Common Hedge Accentor—uttered whilst they take a short flight in the air. Like most moorland birds the notes of the song are very shrill and one can hear them at greater distances than in country containing woods, hedgerows, and running streams. It was these shrill songs that made it possible to track the bird down to a small radius and one had only to use a bit of camouflage and sense to get very close to these delightful little Furze Wrens and watch their antics.

The Grasshopper Warbler—with a song that rattles like a grasshopper, and a habit of creeping about the ground—is one of the most difficult nests to find and one has to be very patient to beat this ventriloquist's rival. The young birds are very beautifully marked, and when reared are very difficult to keep in perfect feather condition.

(To be continued)

REMINISCENCES

By J. M. S. LAX

My avicultural experiences are, alas ! like many more, now only happy memories, but how vivid they stand out during the dark days through which we are now passing.

1st May, 1927, yes, that was the day when my avicultural activities commenced, and for fifteen years I have enjoyed the relaxation and utmost pleasure afforded by this most fascinating of all hobbies. God willing, I hope to carry on again after this horrid war is over !

Like many others I commenced in a very humble way, a pair of Roller Canaries and double breeding cage. These I kept in a small summer house at the bottom of the garden.

As my interest increased so did my stock, and by the end of the first season had some sixty birds, besides Canaries, Goldfinches, Bullfinches, Siskins, Redpolls. Over thirty Canaries were bred that first year, so for a beginner (perhaps beginner's luck) I did well.

The following season I ventured with a pair of African Silverbills which Messrs. A. W. Gamage supplied for 5s. Although sombre coloured these charming little featherweights were most interesting. Due to my ignorance they made several attempts to breed in an ordinary Canary nest pan without success, but reared two young when the correct type nest box was put in.

At the end of the second season, owing to cramped quarters and the mice nuisance, which to quote the late Rev. R. D. Farrar's own words, "Like the poor they are always with us," I decided to build an outdoor aviary.

This aviary produced excellent results, Budgerigars doing exceptionally well. Red Avadavats also reared three young. Later results with the Smaller Waxbills proved them to be unreliable and uncertain breeders. During the winter a pair of local-caught Lapland Buntings came to hand ; unfortunately they didn't survive long. I haven't been able to procure another pair.

As the years have gone by big improvements and additions to accommodation have taken place.

One aviary I set specially aside for a collection of Weavers and Whydahs, and a beautiful sight they were during the summer. Quite a number of the famous nests were made and subsequently used by other birds for nesting sites.

Up here in the North the Java Sparrow and the Cardinals have wintered without heat out of doors quite comfortably. The White Java, although less robust than the Grey, have bred well.

The perky Cuban and common Ribbon Finch have reared young successfully.

On the whole the few Parrakeets kept have done well ; actually only two years before the war when I decided to go in for them.

Red Rosellas bred over seventeen, Stanleys and Bourkes also successfully reared, with eggs from Meally Rosellas, Pennants, Rock Peplar, and Bauer's. Cockatiels also did well ; although not one of my favourites, they are very hardy.

The Lorikeets I found very entertaining, with their quaint mannerisms, good breeders and hardy. Lord Tavistock's recipe was used here with excellent results. Both Swainson's and Red-collared have produced many young.

Lovebirds, Peach-faced, Masked, and Fisher's have been very prolific and hardy.

Thirty Red-hooded Siskins (*S. cucullatus*) came to hand in 1937, really beautiful birds. Results were most disappointing, none being reared and quite a few were lost. This bird doesn't seem easy to breed in captivity. A staple diet of niger with maw seed occasionally seems to suit it best.

Bengalese in all varieties have done well, both for themselves and as foster parents.

I have only kept a limited number of softbills, and usually only males. The pairs kept have been Indian Shamas, Royal Starlings, Dimenelli Weavers, Sacred Kingfishers, White-crested Laughing Thrushes, and a beautiful pair of Rufous-bellied Niltaras. The hen of the latter eventually went to Keston to pair with a male they had—I never heard if anything came of the pairing. I hope it did !

One of my best pets was a Toco Toucan. The quantity of fruit it could put out of sight was really amazing, approximately 75 lb. of grapes in a year, besides bananas, oranges, etc., etc. He was wonderfully tame and followed me around the aviaries just like a dog. I tried in vain to secure a mate for him.

The only Indian Hill Mynah I possessed talked very well ; it was the larger species.

My favourite Finches are undoubtedly the Australian Grassfinches and Parrot Finches. These birds, with their beautiful colours, have bred well up here and stood up to the northern winters well.

Gouldians (Black and Red varieties), Long-tail, Heck's, Parson, Cherry, Bicheno, Ruficanda, and Diamond have all reared many young ones ; also Zebra Finches (White, Silver, and normal).

Two big disappointments were the Painted Finches (*E. picta*) and the Tasmanian Fire-tailed Finches.

Nearly every species of the Grassfinches have found a place in my aviaries at one time or another, I never liked to be without any for long.

The Red-headed Parrot Finches have done excellently, one pair actually reared twenty-one out of twenty-one eggs, a rather rare

achievement ! Royals, rare and beautiful, never bred, and I found it difficult to keep in good feather for long. They seemed to like fruit, and very messy with it they were.

Goodfellows and New Hebridean made no attempts at household duties.

Let us hope it won't be long before we are all keeping birds again, although personally I cannot see, even after the war, the large importations of the good old days. Shipping space I fear will be needed for necessities of life rather than for luxuries, as aviculture no doubt comes under. It makes me quite sad to see my aviaries all empty, and hope it won't be long before some species of birds are housed therein.

BREEDING RECORDS TO DATE. PART VIII

By Dr. E. HOPKINSON, C.M.G., D.S.O.

(Continued from p. 42)

GRASS-PARRAKEETS

BOURKE'S GRASS-PARRAKEET (No. 414), *Neophema bourkii* (Gld.).

Russ in *Bull.* 1880, p. 680, says that he was the first breeder, and Neunzig says they have been bred both in cages and bird-rooms. In Great Britain Fasey was the first to succeed, rearing five young in 1906, and gaining the A.S. Medal (*A.M.* 1906, 276, 343); in *B.N.* 1911, 48, Astley reported that they had been breeding with him for the "last four years". They have also been bred in Australia, *teste* Cayley, p. 246.

BLUE-BANDED GRASS-PARRAKEET (No. 415), *N. chrysostomus* (Kuhl) (*venustus* Temm, NOT Kuhl).

Were among the many birds bred by Cornely, *teste* *Bull.* 1885-6, p. 563, and this was almost certainly the first success; Neunzig says that they have also been bred abroad by a few others. For the U.K. Fasey was the first to succeed in 1909: A.S. Medal (*A.M.* 1909, 357; 1910, 198; 1911, 357), and Tavistock bred them later, see *B.N.* 1917, 251. In America Patrick bred them in California in 1930, *teste* *L'Oiseau*, 1931, 716, and Harvey bred them in Australia about the same time *teste* Cayley (p. 259).

Dr. Lendon told me *in lit.* that hybrids "Blue-winged \times Elegants" were also bred by Harvey about 1939; I know nothing further or which was the male parent, but hope we may get this information in happy days to come.

ELEGANT GRASS-PARRAKEET (No. 416), *N. elegans* (Gld.).

Neunzig (*p.* 751) says "they have been bred in Holland, Belgium, and England", that is before 1921, the date of his book's publication; according to Russ the English record was at the Zoo. In recent years (from about 1932) they have been bred freely at Keston and with Whitley, and abroad in Australia and California.

Hybrids

ELEGANT × TURQUOISINE.

Neunzig (*p.* 751) says that one of this cross was bred in 1879, but does not say where or which way. Whitley has recently (1938 I think) bred the cross and I saw the young.

ROCK GRASS-PARRAKEET (No. 417), *N. petrophila* (Gld.).

Russ bred them (before 1880), *teste* Russ (*Bull.* 1880, 680), the first and only success at that date. On this event Neunzig (*p.* 752) writes: "A pair in Dr. Russ's bird-room shared a cage for months with some young Burmese Blossomheads and ate greedily the extra food provided for them—cooked rice, egg-bread, sweet fruit, etc. The hen took possession of a starling-box hanging in the cage, and one day an olive-green 'Starling' flew and two spoilt eggs were found in the box." This Parrakeet has hardly ever been imported since about that time and is rare and local in Australia. Dr. Lendon told me (*September, 1940*) that the species had been bred in S. Australia "at least twice", and Cayley in his book on Australian Parrots says that a fancier there had "a clutch of young just leaving the nest" (? Did they live.—E. H.). A friend of mine out there got two of these birds about 1933, but they made no attempt at nesting and did not, I think, live long.

TURQUOISINE GRASS-PARRAKEET (No. 418) (*N. pulchella* (Shaw & N.)).

In earlier days when Turquoisines were quite commonly imported they were often bred; at the Zoo in numbers from about 1860 to 1863, Farrar about 1880, are two examples; the last got four young hens at his first attempt, and having obtained mates for these was for years never without the species (*see* Butler (*ii*, 234), and the *Avic. Mag.* and *Bird Notes*, of the early years of the century. Abroad Neunzig says they were first bred at the Antwerp Zoo in 1861, and a little later by Leuckfeld at Nordhasen, and two other early records (Holland and France) are to be found in *Bull.* 1865, *p.* 83. Recently a few Turquoisines have been imported again, and a fresh lot of records have been made—Tavistock, Keston, etc.—but the best results are unrecorded; these are Whitley's at Paignton since about 1932, where they have been breeding almost like Budgerigars. Harvey in Adelaide, South Australia, is also breeding them easily.

Hybrids

TURQUOISINE × ELEGANT GRASS-PARRAKEET.

Whitley has bred these hybrids both ways and numerous since about 1932; they are beautiful birds, nearer the Turquoise than the Elegant.

TURQUOISINE × SPLENDID GRASS-PARRAKEET.

Two young were reared at the Zoo in 1936, *teste* the *Report*, 1936, p. 37. The cross was also bred in Australia "a few years ago", *teste* Cäyley, p. 276.

SPLENDID GRASS-PARRAKEET (No. 419), *N. splendida* (Gld.).

Seth-Smith in *A.M.* 1932, 73, showed that the record of breeding at the Zoo about 1872 (given in *Records* (1926) and elsewhere) was an error due to a mistake in the Zoo Official List, 1883, where "hatched" was printed instead of the correct "purchased".

Harvey in Adelaide is actually the first breeder; from 1932 onwards and when I saw his aviaries in 1933 he had thirty or more of his aviary-bred birds flying there, and six years later I saw them again still breeding freely; he had reared more than fifty and had also bought six wild-caught birds in 1938, the first that had been obtained for many years. Two of his aviary-bred birds were presented to His Majesty the King in 1934. Adelaide Zoo also bred them (*A.M.* 1934, 108). In England the first success was at Keston in 1934, when two young (bred from a pair of Harvey birds) were reared; see Mr. Boosey's full account in *A.M.* 1934, 289. Tavistock also bred them in 1938 (*Bird Fancy*, 9th July, 1938).

A full and most interesting report of these Adelaide breedings appeared in *Cage Birds*, 24th September, 1937, headed "Now firmly established in aviaries" there.

Hybrids with the male TURQUOISINE have also been obtained at the London Zoo.

NEW ZEALAND PARRAKEET (No. 420); Red-fronted Parrakeet, *Cyanoramphus novæzelandiæ* (Sparrm.).

In the days when these Parrakeets were not uncommonly imported they appear to have been easily bred. In *Bull.* 1877, p. 206, the rearing of twenty-three young by Delaurier in France is recorded, and he also (*teste* Neunzig, 763) reared thirty-eight in 1878. Another French record is Savage's in *A.M.* iv, 161. Farrar, in his *Through a Bird-Room Window* (1923), gives an account of the rearing of two young birds "about fifteen years ago", but I can find no record of that date or any other for the U.K. Nowadays they are fully protected as well as being much less common in N.Z., and so are never imported.

Hybrids with the next are on record.

GOLDEN-CROWNED PARRAKEET (No. 421), *C. auriceps* (Kuhl).

Abroad they were bred several times in early days, the first breeder according to Russ being Fiedler in Germany ; Belaurier in France also bred them (*Bull. 1884, 217*). In Great Britain Bouskill was the first to succeed, rearing two young out of five hatched and gaining the A.S. Medal (*A.M. 1898, 77 ; 1902, 37*). More recently (1934) Boosey bred this now extremely rare importation at Keston in 1934, the whole brood of six being reared (*A.M. 1934, 292*). They were also bred by Tavistock in 1937, *see Bird Francy, 1937, 169*, and I think bred with again the next year.

Hybrids

GOLDEN-CROWNED × NEW ZEALAND PARRAKEET.

Neunzig (*p. 761*) says this cross was bred at the Berlin Zoo, but does not say when.

ALPINE PARRAKEET (No. 422), *C. malherbi, Souancé*.

Neunzig (*p. 761*) says that they have been once bred—by Delaurier in France in 1883, four young being reared, and he gives the reference ; *Bull. 1884, 217*.

HORNED PARRAKEET (No. 423), *Nymphicus cornutus* (Gm.).

According to De Brisay, Cornely bred this species about 1882, and also hybrids with the UVÆAN PARRAKEET ; Neunzig, however, only mentions the hybrids, and the earliest and only record of success in true-breeding which I can find is Maillards in France in 1899 in *Bull. 1899, 794*.

Hybrids

HORNED × UVÆAN PARRAKEET.

Bred by Cornely in France in 1882, *teste* Neunzig, 761.

UVÆAN PARRAKEET (No. 424), *N. uvæensis, Layard*.

A hybrid record only : see the above.

SWIFT PARRAKEET (No. 425), *Lathamus discolor* (White).

Towards the end of last century this Parrakeet seems to have been bred by several French aviculturists in 1887, the first being Al Rousse in France or Belgium ; he had a male which paired successfully with two females. From one nest he got five young, from the other four, all of which lived to adulthood (*Nzig. 753*). De Brisay, Cornely, and others also bred them successfully about this date ; *see* De Brisay's "*Dans nos Volières . . .*", *p. 33*, for a full account.

I have no other records till Tavistock's in 1936, but when in

Tasmania in 1932 I was told that they had occasionally been bred in aviaries there.

Tavistock's success was in 1936, a first for the U.K. ; I saw the young birds at Peasmarsh in September ; fully reared and perfect ; they bred again in 1937, see account in *A.M.* 1937, 283.

[(NIGHT PARRAKEET (No. 426), *Geopsittacus occidentalis*, Gld.)

De Brisay says that Dr. Russ bred this bird, but Neunzig has nothing to say about breeding anywhere or by anyone, and the record can only be considered at best doubtful.]

BUDGERIGAR (No. 427), *Melopsittacus undulatus* (S. & N.).

Gould was the first, or one of the first, to bring these birds to Europe, and writes in 1863 that by then they were being bred as easily as Canaries. According to Russ the first breeder in Germany was Graf von Schwerin in 1855, and the first in Germany we may take as first anywhere, I expect.

By the end of the century they were being bred everywhere commercially, and for a time the tropic disease, "French moult," was a handicap, but that gradually disappeared.

They are now being bred in all sorts of colours, which have among the fancy all sorts of complicated names for the various shades, which are more or less beyond a non-fancier's, as I must confess are those used by the genetic experts as far as I am concerned. For years only the yellow variety was known, the blue appearing much later, between 1880 and 1890, but they then appeared to have died out to be resuscitated in Belgium about 1910. For a full account see Cayley's *Budgerigars*, 1933.

Hybrids with males of two species of LOVEBIRD are on record, but are open to more than doubt, as also is that of red Budgerigars being bred ; two such birds were once in the possession I believe of a well-known dealer, but they turned out to have been dyed (red ink !).

The above complete the record of breeding results for the PARROTS which began in January, 1941.

As I asked then : Is there any Member willing and able to complete it for all birds, that is to produce a new edition of my *Records of Birds Bred in Captivity* which was published in 1926 ? This, of course, to be after the war and for this I would be delighted to hand over all my typed records, of which the Parrot ones may be taken as a fair sample.—E. H.

LYRE BIRDS

By DAVID FLEAY, Director, Sir Colin MacKenzie Sanctuary, Badger Creek, Healesville

(Reprinted from *The Australasian*)

Low clouds and trails of vapour hang across the sombre hills; water drips from the lofty foliage and hanging bark of tall gully eucalypts on drenched ferny underscrub; snowfalls have come on the range tops; and creeks surge along in muddy torrents.

But loudly, clearly, amidst all this cheerlessness of sodden bushlands rings the swelling challenging melody of the Lyrebird. Our king of mocking birds revels in the damp, foggy gullies, at their coldest, and the short days of June and July find him at the supreme height of his powers as an artist and mimic, when there is no more joyous creature on earth.

This famous feathered Australian is a very modest-looking, dull-plumaged bird about the size of a fowl, clad in a plain suit of sooty brown lightened only by reddish-brown wing feathers. In fact it is quite a common thing to hear people voicing keen disappointment about the appearance of *Menura novæ hollandiæ* after a first meeting has tumbled preconceived ideas of a Lyre-tailed minstrel with the plumage of a Peacock.

Actually it is only during display that the cock bird's wonderful tail adornment may be properly seen. At other times it is carried "at the trail", with the two big lyrate feathers on each side with their colourful sides inward and the central filmy plumes showing only their blackish brown upper surfaces. It is usually during the month of May that the mature male birds prepare their several little clearings among the bracken of gully slopes. In each a low mound is scratched up—the concert platform from which the winter celebrity concerts are given.

In fancy let me take you to-day up the Badger Valley between Mounts Riddell and Toolebewong (Healesville) on a really lucky visit to the haunt of the Lyrebird. Mind you, such trips have been known to fail in their object completely!

The towering mountain ash tops are lost in white mist, and as we walk along an old track over which tree-ferns almost meet on the northern Riddell slope there is scarcely a foot of this narrow fernless strip of rich ground that has not been freshly scratched over. But in all the great sweep of fern-starred range there is no bird sound. The never-ending rush of the cold Badger Creek waters marks the valley floor.

Suddenly from higher up on the long Riddell slope among the gutted stumps and fallen log relics of past fires rings a loud "quolp-quolp!" "quolp-quolp!" the characteristic double call of the

Lyrebird, often prelude to a singing and dancing performance. This is no exception. Soon a riot of melody breaks on the chill air. With consummate skill the bird is mimicking the voices of his bush associates, but adding volume and richness to the notes.

A cautious uphill stalk nearly ends in disaster when two fallow deer crash off through the scrub. Fortunately they flee in an opposite direction to that of the Lyrebird. The alert songster pauses, but soon begins again. It is not the first time he has been visited. All about us the dark soil and rotting logs have been tilled and scratched respectively over and over again by the birds in search of crustacean hoppers, worms, centipedes, millipedes, termites, grubs, and small lizards.

The calls are now very loud and near, and abruptly 15 yards ahead amidst bracken there is a glimpse of shimmering tail feathers. We must not step any closer. It is difficult to see clearly, but that lovely silvery film almost hiding the bird represents the underside of the twelve central filmy tail feathers which have been thrown up and forward to spread fanwise over the Lyrebird's back and head. Out from the rear of these again, and each extending out sideways from the bird's body to form almost a straight line with one another, lie the two great lyrate "toothed" feathers also inner side facing skywards. Their black curled tips are prominent. From the centre of the reversed butt of the tail stand up two curved whisker-like "lash" feathers, or, as Mr. A. G. Campbell has called them, "feeler tapes." So we have accounted now for all of the cock Lyrebird's sixteen tail feathers.

Under the wonderful cascade of feathery lace the performer is "giving tongue" with a vengeance. One after another we are enthralled by magnificent fortissimo renderings of the Grey Thrush's liquid notes, the shrill "cree-cree" of Grey Currawongs (Jays), the tiny chatterings of minute Thornbills, laughter of Kookaburras, the wistful rolling calls of the great Wedge-tailed Eagle, the rich notes of the Grey Butcher Bird, flight cries of Crimson Parrots, the drawn-out whistle and final crack of the Whipbird, the plaintive wail of the Black Cockatoo, and many others.

Interspersed with these, and most glorious of all, come the joyous bubbling crescendos of the Lyrebird's own notes. Every now and again the songster steps from side to side with corresponding sweeps of his plumage accompanied by loud "quolp-quolps" which echo afar through the bush. Regular clicking or rattling sounds are also part of the accompaniment to the dance.

Abruptly the repertoire ends and, folding his tail down and back, the lustrous-eyed songster walks away with dignified mien, immediately setting to work with his big powerful feet, one at a time, in the endless digging out of palatable insect food.

It is noticed that in this process no matter how vigorously he digs or how big a stone or branch is jerked aside in the grip of his strong

toes and claws, his head, with its keen black eyes, remains as immovably fixed as that of the Sphinx.

His next bushland performance will probably be staged on another concert mound, but we have been exceedingly fortunate in both hearing and seeing him at such close quarters. The memory of that wet and slippery bush trip, with the exhilarating melody of that joyous bird at the end of it, remains with us as a particularly vivid and lasting impression, though it was but a mere glimpse of the Lyrebird's infinite variety.

Thanks in the main to the years of work undertaken by Mr. Ray Littlejohns both sound recording of the Lyrebird's voice and films of its display and habits have been made, and so the star of our Australian bushland has come to us and to the world in talkies.

One aspect of the Lyrebird's wonderful mimetic ability that has not received much notice concerns nocturnal sounds. From concerts I have heard from a male bird between its plumage-preening on a tree bough, it is evident that, while perched high up one-legged in a tall wattle or blackwood at night, the birds are not entirely oblivious of sounds and stirrings in the bush about them. With inimitable precision comes the throaty gurgling shriek peculiar to the big black possum glider (flying squirrel). Added to this are remarkable renderings of the sing-song mopoke call of Boobook Owls and the guttural laughing of large possums.

The limelight in Lyrebird land must not be allowed to dwell only on the cock bird. The soberly dressed and slightly smaller hen, with her plain and comparatively short tail, is also an accomplished vocal mimic. On many occasions I have listened to a female *menura* reproducing most of the bush calls so popular with the cock bird, though I have not heard the swelling notes of ecstasy typical of the male.

It is probable that, like the Satin Bowerbird, the hen visits the place of display—in this case the dancing mound—and that much of the cock bird's artistry is aimed at impressing and attracting the plainer lady or ladies. Though it has been claimed that the birds mate for life, this seems improbable particularly when it is understood that the lordly male takes no part in house-building nor in foraging for his offspring's early livelihood. Perhaps, as a great artist, he is temperamentally unsuited for such mundane acts of drudgery.

During June the hen bird constructs her bulky nest, composed outwardly of light sticks and dry fern fronds; it is very comfortably lined inside with a soft bedding of wiry rootlets and perhaps fibres of bark. With a side entrance hole it is reminiscent on a grand scale of the more familiar nest of a ringtailed possum. The stick nursery may be at ground level among fallen fronds of treeferns, on the edge of a bank, between the trunks of small trees, in the burnt-out shell of a tree, or aloft 30 feet or more above the ground. Only a single

egg is laid. It is usually of a dark brown tint, displaying various darker streaks, spots, and blotches. The youngster has a long infancy, and presents rather a sad little sight, with large lugubrious eyes peering out from a fluffy mass of down.

When handled previous to the nest-leaving stage the fledgeling grips one savagely with its powerful feet, and shrills loudly for mother. She is seldom far away, and on such occasions displays her alarm and distress by the single piercing shrieks, the characteristic alarm notes of Lyrebirds in general. The quick perception, sharp danger cry, precipitous retreat of any Lyrebird sighting a dog, particularly one of reddish colour coat, seems to indicate beyond all doubt that in the normal course of events it would be a super-fox that could successfully stalk these alert birds. Their vision is extraordinarily keen, even in the deepest and darkest gullies.

Associated with the long childhood of Lyrebirds is the span of years that elapses before the cock bird becomes mature and attains his full tail. The cock Lyrebird of a pair living at present in a large bush enclosure at the Healesville Sanctuary is estimated to be at least four years of age. Both birds were brought in shortly after the disastrous bush fires of 1939, yet even now, instead of a complete set of twelve filmy feathers in the central part of his tail, this bird has only nine perfect ones. The three missing plumes are represented by two plain bladed hen feathers, and third that is betwixt and between—partly bladed and partly filmy. Two years ago his tail contained four of these hen feathers. His lyrate feathers, though long, are narrow and ribbon-like compared with those of a fully developed bird.

From observations of several past winter seasons, it seems evident that this cock bird is still immature. He sings and mimics cleverly, but so far has not been seen to display in the manner of older birds. In May this season he constructed his first small dancing mound, but so far no one has seen him showing off upon it.

Evidently it is not until cock Lyrebirds are five or six years old that they are fully developed, both physically and artistically. I recollect having seen only one photograph of a male with incomplete tail in the act of displaying, and in this particular instance the bird happened to be only one plain feather short of the full set.

A second young male Lyrebird at the Healesville Sanctuary which, remarkable to relate, was foster-fed by both Lyrebirds of the pair already mentioned, is also a good example of the slow development of its species. Though now nineteen months old the bird still retains a plain hen tail of undifferentiated feathers, totalling the usual sixteen in number. As tame as a farmyard fowl this youngster is a wonderful specimen. He eats a good deal of "civilized" food in addition to worms and grubs. No concerts have yet been heard from him, though he calls loudly in the characteristic "quolp-quolp". He is distin-

guished from a hen bird by larger size, more powerful legs, and a longer, more curved, and broader tail.

Items in the future mimicry of this young bird are awaited with eagerness, for within easy and constant hearing are both Whistling and Sea Eagles, Stone Plover, Brolgas, Emus, Dingoes, and a variety of inland Cockatoos and Parrots, foreign to the usual environment of Lyrebirds. After several years of association with the voices of these same birds and animals it is truly remarkable that the older cock Lyrebird has failed to reproduce any of them. His repertoire, which is an extensive one, is quite often given, but it only consists of the mimicry of voices strictly indigenous to the neighbouring ranges whence he came.

The question arises whether the Lyrebird's early quiet years are the receptive ones, and is it incapable at later stages of memorizing new sounds?

Though magnificent and unsurpassed in his faultless mocking of bush associates *menura* is not nearly so quick on the uptake as the really clever Satin Bowerbird. I recently heard a green hen of the latter species reproduce quite loudly the repertoire of a Lyrebird that it had recently heard. It included that bird's own native calls and second-hand mimicry of at least a dozen bush birds' voices. In the case of the Bowerbird, however, mimetic memory appears to be short, and in the absence of the original of a particular imitated song or cry it soon appears to be replaced by something more topical.

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A TAME HANGNEST

By GUY FALKNER

I have just lost an old Hangnest. I had him for fourteen years, and he was an adult when given to me—pale yellow and black, which denotes he had at least been in captivity over one moult before I had him. The captured birds (unless colour fed) lose the deep orange after they moult in captivity, just as our Linnet loses its scarlet breast. This bird, however, was remarkably tame, and every summer was allowed complete liberty. Nosey *kept his deep orange colour* until his last moult, when, if from old age or not I don't know, he came out half-pale yellow, half deep rich orange, and then, having brought himself to full flower, so to speak, threw up the sponge and died ! For two seasons I colour fed him, then gave up as the natural wild food, insects, etc., kept him in his perfect orange. When let out of his cage into the garden for the first time, after, say, six months, he would fly on to the veranda railings (please note that his mode of progress was always the same, year after year), almost sit down on his tail, and fluff himself out and whistle a few notes, then draw himself up very "flat" and hop a few inches, crouch, dilate his eyes, and then he was off like an arrow of gold, over the garden, through the orchard, and straight up to the aviaries, where he would sit on the wire and do his best to murder whatever bird he could get his beak at. He was a killer, this bird, nothing smaller, or indeed nothing as big as he was himself, was safe from him ; one had to die, and he survived many battles. In old age he became extremely vicious with strangers, darting on to their shoulders and pecking at eyes, in fact he really was dangerous to eyes, and had to be shut up if anyone came over to see the garden or birds, etc.

He remained faithful to me and followed me about everywhere, making sort of little clucking noises of pleasure, at the same time fluffing his feathers out and dilating his eyes ; he did this to no one else. He would in late summer always "mate" on my hand, and at this time (July to late August) regularly made a cup-shaped nest suspended from twigs like a sort of well-made hammock. He used the same yew tree for his nest for several seasons. I got him hen birds once or twice, hoping to rear some young ones. Sometimes it would go well for a very short time, but eventually he always killed them by pecking their brains out. Tame cock birds of many species are useless to breed from ; they get too fond of their human friends to pay any attention to their own species. He did several tricks, but the one that took the longest to perfect was to "sit" like a retriever, until told to move. He would "sit" where I put him and *stay there* until told he could go. He

literally soaked himself in his bath three or four times a day ; he was a great bather, he would then sit in front of the fire to get dry. He was quite safe to take out in the car in a little cage for picnics and be let out to fly wherever one was. His greatest delight was to remove green fly from the roses, but as he would sometimes sit on tender shoots his weight would break them down, so, as a gardener, I took a poor view of him. A bird he particularly disliked is a very handsome green Glossy Starling from Kenya, also a remarkably tame bird—of which I may write later on perhaps, if the Editor is hard enough up to want me to write anything else—which I doubt. Nosey (for this was his name) knew all the ways into the house, and the difficulty was keeping him out ; every window had to be shut or wired over. He was as destructive as a hound puppy, tearing books up, opening cigarette boxes and throwing cigarettes all over the place, tearing them to ribbons, and sending the servants mad. He was a very fine whistler, and would sit on the top of a telegraph pole or on the top of a very high old dead wych elm and whistle his beak off—luckily well out of range from the small boys' catapults. I think Hangnests are almost ideal cage birds, as I have never met one that could not be tamed—but their “ crab ” is that they do get vicious with strangers and children as they grow old. My bird was fed on a good insectivorous mixture, various fruits, boiled rice, boiled potato, and twice a week small scraps of raw meat (first soaked for a few minutes in water), half an orange a day, lettuce or other green food every day ; green food is, I think, *most* important, in fact just as important as the insect food. Mealworms, of course, he had, about twenty a day, sometimes more, sometimes less. One day he had removed the lid from the mealworm tin and had a party all on his own—talk about “ hangover ”, that bird knew all about feeling liverish ! In one sense he was a good gardener, for there was no insect, barring woolly caterpillars, he would not deal with. If he were sitting on one's hand he would *very* carefully go over all rosebuds for green fly, never breaking a single flower, but if on his own I must own he was not a good gardener, for he grasped the shoot with his feet and wrenched the end off—he had no relation to a “ green finger ”. A Raven and a Peacock combined, in fact, could not do more damage than Nosey if he *were hungry*, otherwise he was no trouble in the garden, except that he would pull up labels and eat dianthus buds. I miss him terribly, and always shall.

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BREEDING OF SEMI-CAPTIVE BIRDS IN CANADA, 1942

By H. R. IVOR

In the spring of 1942 I had some sixty-five native birds of about thirty species in the winter aviary. This heated bird-room is 10 feet wide, 30 feet long, with a separate store room at one end of 4 by 10 feet. The west end joins the enclosed porch of my cottage and is separated from it by doors 6 feet wide made of vertical wires, and giving the appearance of the side of a bird cage. Ten feet of the length at this end is gabled, the peak being 12 feet high. The balance of the roof is flat, 8 feet high, with $\frac{1}{2}$ in. wire mesh ceiling over which are 4 in. bats of mineral wool. The roof is in four sections, which allows it and the mineral wool being removed in summer. The south side has six screened windows which with the door take up the whole of this space to within 3 feet of the floor. All walls are filled with mineral wool bats and finished on the inside with natural coloured British Columbia fir plywood. Arborvitæ to the full height of the room is used for roosting sites. The floor is fine sand 3 feet deep. Along the north wall is a solid row of built-in cages.

These are 3 feet high and attached to the ceiling so that birds cannot get on top, and are used only for birds which begin to fight in the spring before they are moved to the summer aviary. Fourteen partitions made of $\frac{1}{2}$ in. wire mesh on frames, may be slid into position to divide such birds when necessary. When unoccupied the birds have the freedom of these cages, the doors being left open.

The aviary is heated from the house furnace in winter. It is quite easy to keep the temperature sufficiently high for the birds to be comfortable on account of the mineral wool linings and the double glass cloth on the sash.

The summer aviary is octagonal ; 25 feet in diameter, 6 feet high at the periphery, and 10 feet high at the centre. Unmated birds are kept in the centre compartment which is 13 feet in diameter. Around the periphery are eight nesting compartments each, of course, facing a different direction. To protect the birds from Hawks and Owls, 2 in. wire mesh covers the roofs and sides, and is placed 4 inches from the inner wire.

April of 1942 was exceptionally fine and warm, during the latter part of the month the temperatures reaching as high as 85 degrees in the shade at times. For this reason I moved all but the smaller birds such as Indigo Buntings and native Sparrows to the summer aviary. This proved to be a mistake as the weather in May became very wet and comparatively cold, and two of the female Rose-breasted

Grosbeaks who had finished their nests before the middle of the month became egg-bound, as did the female Cowbird. I lost the two Grosbeaks but managed to save the latter.

It is my practice to allow all birds which build in the aviary to have their liberty after the first egg is laid. In each nesting compartment I have a small gate in the wire, about 3 feet from the ground and use a 4 in. wide shingle for a platform in this opening. During incubation I open the gate in the morning and allow the birds to go in and out as they please during the day, and close the gate before dusk after making sure that the birds are inside. At times I have to call them from the woods, but usually I just watch for their return. The reason I enclose them at night is to protect them as long as possible from owls. After the young are hatched and until they are weaned I do not close the entrance at night as it is necessary for the parents to begin seeking food for the young at daylight.

Compartment No. 1 was occupied by a pair of Evening Grosbeaks ; No. 2 Wood Thrushes ; No. 3 Cardinals ; No. 4 Rose-breasted Grosbeaks ; No. 5 Bluebirds ; No. 6 Catbirds ; No. 7 Rose-breasted Grosbeaks ; and No. 8 Evening Grosbeaks. As these compartments were filled I had to let the Baltimore Orioles and Cedar Waxwings build in the main part of the aviary, and the Horned Larks in the winter bird-room.

When the Evening Grosbeaks had laid their first eggs I opened the gates. Although these two pairs of birds had never had their liberty since their capture they had no particular difficulty in finding the openings. They had not enjoyed their liberty long before a Sharp-shinned Hawk appeared—a bird which had not been known to nest in this locality for some twenty years. During the day the Hawk killed the male from compartment 8. I thereupon closed his mate in, also the other pair, as never before having had success with these birds I could not afford to take further chances of losing them in this way.

Four eggs were laid by the female in compartment No. 1. One egg hatched on 26th July, the other being clear. Plain boiled custard, nestling egg food, earthworms, ant^l larvæ, and what insects I could sweep from the grass with a net were supplied, and the nestlings were fed by both parents. All the seed which was regularly fed to them was withheld, for former experience had shown that they would feed such unsuitable food to the youngster.

On 3rd July the female began lining the old nest while the baby was in it. I placed a deserted American Robin's nest about a foot from the Grosbeak's nest and put the youngster in this. Here it was taken care of by both parents while the female continued to reline and build up the old one. On 7th July the first egg was laid and the fourth egg on the 10th. On 22nd July the fourth egg hatched, the other three being clear. The female only fed this nestling, but after

three days neglected it to such an extent that I had to take it from her as she would not cover it at night. She refused to feed it on the 25th, and gave all of her attention to the first one, and I was able to keep it alive only until the 27th. The first was duly weaned and is to-day the replica of his father with the exception that his beak is larger, the father being the Montana sub-species with a smaller beak than the Eastern variety. So far as I know this is the second time these birds have been reared in captivity.

The female Evening Grosbeak in compartment No. 8 laid four eggs, but all proved to be clear. I took these away from her and gave her the only very young nestling I could find in a wild bird's nest—a three-day-old Indigo Bunting. Although these birds are one of the smallest of our Canadian song-birds she succeeded in rearing it to maturity, and it is now, in February, 1943, in full plumage and beginning to sing.

One pair of Wood Thrushes mated in the main compartment and I placed them in No. 2. On 24th May the nest was completed. The first egg was laid the next day, and the third on the 27th. I opened the gate in their compartment but they, while able to find the opening, were unable to locate it when they came back. Therefore to allow them liberty I had to take down the whole upper front of their compartment, this upper part being 3 by 10 feet. I did not close them in after the Hawks began attacking for the reason that they were ground feeders and were in considerably less danger than any of the others except the Catbirds. For several weeks, however, their great danger was visitors. I had to warn these continually to watch every step as the Thrushes were so often under foot, and were so unconcerned about strangers that the danger of stepping on them was very great. However, they reared the youngsters to maturity. Although nestling food was always before them they fed the young almost entirely on insects which they gathered from under the surrounding shrubbery.

In No. 3 I placed an old mated pair of Cardinals. The female built a nest as she had done for years, but each of her eggs was soft-shelled and dropped in the compartment. Thinking that natural food might render her condition such that hard-shelled eggs could be laid—calcium supplied to her did not have this effect—I opened the small gate. The male, however, was killed by a Hawk the first day he went out. Later I placed a one-year-old male with her and again opened the gate. Both went out and, so far as I know, were killed, as neither returned.

A mated pair of Rose-breasted Grosbeaks was placed in No. 4. In a few days the nest was built and three eggs laid. When the first had been deposited I opened the gate. Both birds soon found it and had no difficulty in locating it when they came back from feeding on natural food. In the case of these birds the male went out first and

when he returned usually took his place on the nest while the female had her turn hunting insects.

At the same time the Catbirds were at liberty. Unfortunately the male Catbird found this gate and entered it when it happened that both birds were out at the same time, and threw two of the Grosbeak's eggs out of the nest. The third egg hatched, however, and it was soon apparent the youngster was a female. Although this little one was not handled nor hand-reared she turned out to be one of those very rare birds which showed no resentment whatever at being handled when she became mature. Oddly enough, too, she turned out to be one of the most quarrelsome of my Rose-breasts, none of which are very gentle with others of their kind.

In No. 5 I placed a mated pair of Bluebirds. When the nest was finished and the first egg laid I opened the gate. Neither of these birds had any difficulty in locating the entrance after they had once found it. Five eggs were laid and all hatched. When the oldest was five days old the mother was killed by a Hawk. The killing of all these birds happened during two days. The day the mother Bluebird was killed I stayed around the aviary all day with a gun, but she happened to go to the vegetable garden just beyond my sight and was killed before I located her.

I at once closed the male in. During the previous year the female that was killed and a different mate had reared two males. One of these males was very dear to her still, and oddly enough her present mate, too, was fond of him. During this nesting season, however, her mate would have killed the other brother had he been able to get at him. The favoured one, too, was exceedingly fond of the mated pair and continually tried to get in to their compartment. I allowed him in and he at once found the gateway and began helping the father to take care of the five babies. I let them out only during the part of the day when I had time to follow them with a gun, and it was an exceedingly anxious time for I knew the hawks were around still.

Both little fellows worked very hard, but they seemed unable to rear all five. Three of the nestlings died within a few days. Probably the reason was that the father did not cover the young during the night. Both remaining babies—the two oldest, a male and a female—thrived however. The male turned out to be one of the most confiding birds I have had, while his sister, although coming to my hand for food does not trust me to more than this extent.

A mated pair of Catbirds were placed in No. 6. These birds, too, had no difficulty with the entrance gate. Only three eggs were laid and all hatched. For the reason that the parents hunted insect life mostly on the ground I did not enclose them, for they were not in great danger from the Hawks. I was unable, however, to allow them liberty after the young were well able to fly for the reason that they

coaxed the little ones to the entrance and out. At times I had considerable difficulty in locating and bringing back these babies. Another difficulty with these birds, too, was the fact that the male was continually going into the compartments of the other birds with the object apparently of destroying their eggs. It was not that he did not know his own entrance, for odd as it may seem, each pair of birds was quite well aware of where the entrance to their compartment was placed, even though each gate was identical in appearance and size. These gates, too, were only 10 feet apart, although each faced in a different direction.

Before the young were weaned the female Catbird, without relining her nest, laid three more eggs in the old one. This nest had been made in a clump of cedar boughs and by this time the cedar had turned brown and ugly so I decided that I would cut away carefully the dead parts and replace with fresh green branches. This I did without even disturbing the female. However, she showed her resentment by immediately throwing her three eggs on the ground after I left the compartment. I had no idea that she would resent what I was doing for she had no objection to me being quite close to her during her first brooding, nor did she object a great deal to me feeding her young.

In No. 7 I placed another pair of Rose-breasted Grosbeaks. The male was my first Rose-breast, seven years old and a very lovable bird. As usual I opened the gate and during the first day both birds took their turns at going out. The second day the male was taken by one of the Hawks. Two eggs only of the three hatched. When the young were two and three days old both died. When examining them I found that the nest was swarming with red mites. This was the first nest I had ever had which had become infested with these parasites and I had given no thought to such an infestation. No other nest in the aviary was infested and it was a decided puzzle as to how they had gotten into this one. Undoubtedly the nestlings perished here from this cause.

One pair of Cedar Waxwings built a nest in the main compartment, but both the one egg laid and the nest were destroyed by one of the inmates. I had only one Baltimore Oriole, a female. She, too, built in the main compartment and laid, but of course the eggs were infertile. The Horned Lark built a nest in the winter bird-room and hatched two chicks. Unfortunately a chipmunk found its way in and destroyed both young and nest when the little ones were five days old.

Because of one pair of Hawks it proved to be an exacting and only partially successful season.

THE WILD GAME PHEASANTS

By JEAN DELACOUR

The Game Pheasants, or true Pheasants (*Phasianus*) are now so widespread in Europe and in America as sporting birds, that it may not be unnecessary to trace their origin.

In a wild state, Pheasants of the present genus are found from the northern Caucasus through Central Asia to China and Japan. They have a continuous range in eastern Asia, but elsewhere they inhabit numerous separate areas: valleys and mountain slopes, plains and oases, in other words, grounds offering them the sort of habitat they require. It consists of open country with sufficient water, covered with long grass and dotted about with bushes and trees. To the contrary of practically all other Pheasants, these birds do not live in forests; they are attracted by cultivation and one often finds them around corn, wheat, and paddy fields. They are accustomed to cold and changeable climates and prove, therefore, very easy to acclimatize in North America and in Europe.

All true Pheasants are closely related, sufficiently so that fertile hybrids between any two forms can be produced. They almost completely resemble one another in shape and habits, and this has led many authors to consider them all as subspecies of one species. It is the more tempting to admit that they replace one another geographically and in reality form one large natural genus and super species. But it is more advisable to divide them into three distinct taxonomic species on account of their very different colour pattern.

In the western half of their range, one finds birds with a more or less homogeneous general red colour, the lower back being always reddish brown; I consider them as belonging to the species *Phasianus colchicus*. The best known form of this group is the Black-neck, four very close races of which live north and south of the Caucasus and around the west and south of the Caspian Sea. It even has been asserted that the birds from eastern Bulgaria, Thrace, and European Turkey, along the Black Sea, represent a genuine wild form (*P. c. europaeus*. Hachisuka, *L'oiseau*, 1937, pp. 3-6.) It is difficult either to admit or reject this opinion in the present state of our knowledge. The form introduced by the Greeks and the Romans into many parts of Europe is most probably the south Caucasian bird, *P. colchicus colchicus*, very close to the present so-called Old English Black-neck. The second most popular member of the group is the Mongolian Pheasant (*P. c. mongolicus*), much larger and greener than the Black-neck, with white in the wing and a white collar. The Prince of Wales' Pheasant (*P. c. principalis*) from south-east Turkestan, a very red bird, without a white ring neck, has also been introduced into Europe

in the early nineties, but has since disappeared. There are other related subspecies, with or without collars (the white ring neck is not an important character and varies easily with distribution). They all have a discontinuous distribution, each of them being secluded in larger or smaller ranges surrounded by desert or high mountains where Pheasants cannot live.

The second or eastern group of Pheasants constitute the species *Phasianus torquatus* and the Chinese Ring-neck is the most familiar of them. They have a more varied plumage than the western birds, and their rump and lower back is always greyish-green. Usually their upper back and flanks are yellow spotted with black, their wings chestnut red and grey, and their tail pale greenish or brownish barred with black. Three forms, which link the two groups, are found isolated in oases of western China and Turkestan, and another one in Formosa. All the others have a more or less continuous distribution in China, reaching Northern Burma, Tonkin, and Korea. The Chinese Ring-neck (*P. t. torquatus*) has been acclimatized in considerable numbers in N. America and in Europe, where the Corean Ring-neck (*P. t. karpowi*), Pallas' (*P. c. pallasi*), and the Formosan (*P. t. formosanus*) have also been introduced.

The Green Pheasant of Japan (*P. versicolor*) has a very different colour pattern, and represents a separate species, having its under parts entirely green. There is only a slightly differentiated race in the southern island of Kiu-Siu. The Green Pheasant has been repeatedly introduced into Europe as a game bird.

Pheasants were introduced first by the Greeks and later on by the Romans, into many parts of Europe, and it was then the Black-neck from the Caucasus. The bird must have remained in a pure state for many centuries, as it seems that the Chinese Ring-neck, and other races, were imported and released in any numbers only during the nineteenth century. At present European birds vary in different countries and districts, even coverts, according to the greater or smaller addition of other blood to the old stock of Black-necks. The Chinese and other Ring-necks (Pallas', Corean, Formosan), the Prince of Wales', the Mongolian, and the Versicolor have been added to different degrees on account of their different qualities, Mongolians to increase size, and Versicolor to develop high flight and speed principally.

In North America, most of these different birds have been introduced at the same time and altogether so that the Black-neck is less dominant. In certain regions, in the north-west in particular, the Chinese Ring-neck is found pure of mixture.

Several accidental colour-phases of Pheasants have occurred and have been selected artificially, such as the White and Isabelline varieties. But during the last part of the nineteenth century (about

1888), a very interesting dark mutation suddenly appeared among the hybridized feral birds of England. It long remained scarce, but in 1926 it was already much commoner and was named *P. c. tenebrosus* by Hachisuka. This bird, now well known as the Melanistic Mutant, possessed the attraction of novelty added to those of a high flying capacity and a heavier weight, so that it soon became popular, being reared and liberated all over the world. It easily becomes dominant and has a tendency to grow darker and darker. To-day there is a strain of birds in which both cocks and hens are of an almost uniform dark purple and green and blue.

* * *

NOTES

TWO LONG-LIVED GAMBIA STARLINGS AT THE ZOO.

On my last visit to the Zoo (23rd June) I looked up, as usual, two Amethyst Starlings, *Cinnyricinclus leucogaster*, which I brought from Gambia, West Africa, years ago. No. 1, a hen, arrived in 1922, No. 2, a cock, in 1928, so they have lived there for 21 and 15 years respectively in perfect health and plumage, though perhaps now the hen is beginning to look a little passé.

E. H.

AN APPEAL TO AVICULTURISTS WITH SURPLUS BIRDS.

The Editor of the *Avicultural Magazine* has received an appeal from a Home Office approved school for young delinquents for assistance in stocking the school's aviaries. The headmaster writes : " Among the factors leading to a boy's rehabilitation, I rate the association with birds and animals very highly, and experiments over the past sixteen years have proved that the care of living things has a lasting influence in the lives of many of the people committed to our charge. I have been recommended to get into touch with you in order to discover whether it is possible to obtain birds that are perhaps imperfect from a breeding point of view. Unfortunately this is one of the activities for which no official funds are available, and I am therefore dependent very largely upon the generosity of those who are interested." The school has a stock of bird seed, and there is good water in the grounds. The Editor will be glad to send fuller details to any member of the Society interested, and earnestly requests those who may have birds which have become surplus on account of feeding difficulties to consider the above suggestion for disposing of them, and to communicate with her.

* * *

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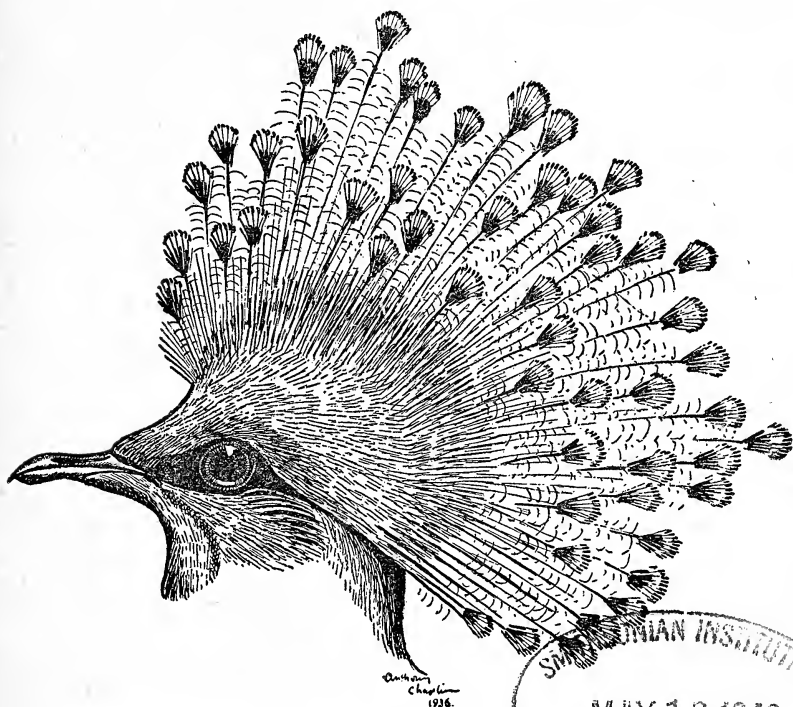
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ROOSEVELT'S PURPLE WAXBILL.

Granatina ianthinogaster roosevelti.

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SEPT.—OCT., 1943

ROOSEVELT'S PURPLE WAXBILL

(*Granatina ianthinogaster roosevelti*)

By DAVID SETH-SMITH

Of the genus *Granatina*, the Grenadier Waxbills, the Violet-eared Waxbill, *G. granatina granatina*, of South Africa, has been known to aviculturists for many years as a most desirable though rare and delicate species. On very few occasions specimens of the more richly coloured Purple Waxbill, *G. ianthinogaster* have reached this country. It is distributed throughout East Africa and several races have been described, including the subject of the accompanying coloured plate, *G. ianthinogaster roosevelti*, described by Mearns Smith in 1913, from the Nyiro River, Kenya.

On 25th May, 1933, that excellent collector, C. S. Webb, returned to London from an expedition to the Aberdare Mountains and neighbourhood, with a considerable collection of rare birds, including a specimen of this rare Waxbill from which the coloured drawing was made.

The Grenadier Waxbills are certainly among the most beautiful of the smaller ornamental Finches, though undoubtedly frail and needing great care. Although the Violet-ear has been known for a long time, it has always been rare and, so far as I know, has never been successfully bred, perhaps on account of the fact that, when feeding its young it requires a constant supply of small living insects, and no substitute is adequate. No doubt Purple Waxbills are of similar habits.

Let us hope that, when the world returns to peace and sanity, more of these rare gems will reach this country and become available to aviculturists with suitable means of dealing with such hot-house treasures.

* * *

BIRDS AT THE ZOOLOGICAL GARDENS, DEHIWELA, CEYLON

By YVONNE BURN, F.Z.S.

I was very interested in Major Lendon's recent article on birds observed by him in Ceylon during his recent visits, more especially as he visited us frequently and often accompanied Dr. Hill and myself on our official visits to the Zoo. We had expected from him an account of his impressions thereon, similar to the one he so ably gave earlier of his experiences in the Gizeh collection. That he was equally interested in our exhibits was obvious, and I was pleased to see, from the last paragraph of his article, that he considers a brief account would interest the Magazine's readers. I am, therefore, adopting his suggestion of putting a few notes together, although I must confess that there is little of outstanding note for record.

The Colombo Zoo is situated some seven miles from the city centre on a site covering approximately $11\frac{1}{2}$ acres. The situation is ideal, not only from the zoological point of view, but also as a natural beauty spot, since Colombo itself is almost entirely built of flat ground; whereas the gardens repose on one of the few elevated spots for many miles around. The collection was originally started by the late Mr. John Hagenbeck, the well known collector and trapper, in 1932. At first it was used principally as a clearing station for animals captured not only in Ceylon, but also elsewhere in the East. These were destined for Western collections; and were replaced periodically by American and West African consignments travelling the other way to zoos in Sumatra, Java, India, and so on. Consequently we had the advantage of a shifting population, with always something fresh to see, though there was the concomitant drawback that old friends were frequently transferred elsewhere. Still, there was always a basic collection that the management of the time kept for permanent exhibition in Ceylon. One must admire the site chosen by Mr. Hagenbeck which, at that time, was well outside the city, almost in the jungle; but, with the advance of ribbon-building—a pernicious influence by no means confined to occidental cities—Dehiwela has become a suburb, losing much of its charm thereby.

A private company was formed to operate the Zoo. This functioned till 1936, when from financial and other reasons, it was impossible to continue on this basis. Representations were made to the Ceylon Government to take over; at first without success, despite the recommendations of a special advisory committee set up for the purpose. Eventually things got so bad that public feeling was aroused and the Government finally stepped in and took charge, though with modifications in the arrangements suggested by the aforementioned com-

mittee. This committee was then converted, after some changes in personnel, into an advisory committee, which, in turn, appointed a standing committee for the actual administration and day-to-day operation of the concern. Generally this was a better arrangement, but the temporary housing of many rare and beautiful species ceased with Mr. Hagenbeck's retirement.

The gardens were not originally planned on any special lines, apart from exigencies of the terrain, which were, very wisely, left undisturbed. The cages have been built on terraces. There are two large ponds—relics of former quarries—on which are kept, more or less at freedom, all our waders and other waterfowl. Very few of these are pinioned, the usual procedure with new stock being to clip one wing. When the feathers have been replaced the birds have, by then, become accustomed to their new home and do not tend to wander. Our only serious losses from this cause have been the Mandarin Ducks (*Aix galericulata*), Australian Sheldrake (*Casarca tadornoides*), and Cormorants (*Phalacrocorax niger* and *P. fuscicollis*). A couple of rafts on each pond add to the appearance by attracting the Darters (*Anhinga melanogaster*), who sit for hours drying their wings in their characteristic way after their diving exploits. They are also used freely by the Whistling Teal (*Dendrocygna javanica*) and the various Herons. Two of our Cormorants had nested in a tree overhanging the upper pond, but somebody disturbed them and they took a dislike to the spot and migrated. The only waders not allowed their freedom are the pugnacious kinds, such as the Greater Adjutants (*Leptoptilos dubius*), and the various Cranes, of which we have Crowned (*Balearica pavonina*), Sarus (*Megalornis antigone*), Demoiselle (*Anthropoides virgo*), and Lilford (*M. grus lilfordi*). We have had a measure of success in the breeding of Black Swans (*Chenopsis atrata*), whose lovely cygnets grace the lower pond from time to time. Few of these, however, have been reared to maturity, some broods being carried off wholesale with one cause or another. Mongooses and civets are responsible for some of this, as well as for fatalities among smaller waders such as Spoonbills (*Platalea leucorodia major*), Ibises (*Threskiornis melanocephalus*), and Gulls (*Larus brunneicephalus*). Of the Storks mention should be made of the hybridizing of the Lesser Adjutant (*Leptoptilos javanicus*) with the Painted Stork (*Ibis leucocephalus*), already recorded by Dr. Hill in the Magazine. Other representatives have been the European White Stork (*Ciconia ciconia*) and the Parson Stork (*Dissoura episcopa*). The Bitterns, represented by the Little Green (*Butorides striatus*), the rare Black (*Dupetor flavicollis*), and occasionally by the migratory Malay (*Gorsachius melanolophus*), have to be kept caged to guard other birds from their attempts to transfix the latter's eyeballs.

Struthious birds have been very well represented till lately. Our Ostriches (*Struthio australis*) are constantly laying and incubating

their eggs, and one year we were successful in rearing a couple of babies, only to lose them during our absence from Colombo, at the age of over twelve months. Since then several clutches have been laid, but nearly all have proved infertile. It is problematical whether in this damp climate the young would ever reach maturity, even with the greatest possible care. All our Emus (*Dromaeus*) have succumbed to violent deaths, as have also at least two Cassowaries, including our rare d'Albertis's (*C. casuarius sclateri*) female, which we described last year in the Magazine. We are left with only one *C. unappendiculatus suffusus*. Two Cassowary casualties have been from drowning in the adjacent pond.

We have nothing outstanding in the gallinaceous line, nor have breeding results been particularly good here; possibly from overcrowding. This we shall be able to prove when our Pheasants are housed in the proposed new pheasantry. Numerous eggs have been laid, but the hens make no attempt to incubate them, with the exception of one Ring-necked (*Phasianus torquatus*) who has been sitting in a clump of guinea-grass for the last few weeks on a clutch of five eggs. She is mated to a Reeves's (*Syrnaticus reevesii*). Whether the eggs prove fertile and, even if so, whether the hen manages to rear her chicks are matters of conjecture. One feature which militates against the breeding of Pheasants and similar ground birds in public collections is the constant battle between the interests of science and those of the visiting public. The latter expect, and indeed have a right, to see the birds, and the seclusion required by the birds hardly permits this. These drawbacks do not, of course, apply to species which employ nest boxes and the like. In several cases (Peafowl, Quail, and Silver Pheasant) I have tried artificial incubation with success, but both Golden and Amherst Pheasants have proved infertile so far.

The Ceylon Spur-fowl (*Galloperdix bicalcarata*) regularly produce their two broods a year; and I would much like to see similar results with the Jungle-fowl (*Gallus lafayettei*), though strangely enough, this very common and decorative species has never been represented in the collection, in spite of the fact that, at the time of the amalgamation with the Colombo Museum collection, there were twenty or more birds in the latter; but, owing to some misunderstanding, arising out of the disastrous state of affairs at the Museum prior to the air-raid on Colombo, these birds were never handed over. We have both the Blue-breasted Quail (*Excalfactoria chinensis*), an indigenous bird, and the Australian Brown Quail (*Ypsilophorus ypsilophorus*). The latter breeds very freely, but we get a lot of deaths from intestinal worm infections. We always took this bird to be the Stubble Quail, and we have to thank Major Lendon for the correct identification.

Pigeons are poorly represented, but by far the most valuable are the Crowned Pigeons (*Goura coronata*), which Mr. Frost collected for

us in New Guinea. They are now old inhabitants ; and, although they have been given every facility, so far they have shown no inclination to nest. I am not sure that they are a true pair, and would welcome any reader's advice on the sexing of this species. Our Bronze-wings (*Chalcophaps indica robinsoni*) breed regularly and rear their young in a small bush in the middle of their aviary.

So far as I am aware there is no record of the breeding of any of the birds of prey, but as these are rare breeders in captivity this is not surprising ; though the breeding of the Sociable Vulture in London (see Morrison-Scott, *P.Z.S.*, 1936) and the Griffon at Chester (see Mottershead, 1941) raised our hopes in respect of our Griffons. As, however, they share a cage with a pair of Hooded Vultures (*Necrosyrtes m. monachus*) much cannot be expected. We are well supplied with eagles. Our most imposing one is the Australian Wedge-tailed Eagle (*Uroaëtus audax*), followed, in order of size, by the local White-bellied Sea-Eagle (*Haliaëtus leucogaster*), Tank Eagle (*Ichthyophaga ichthyaetus plumbiceps*), and two specimens of Ceylon Serpent-Eagle (*Haematornis cheela spilogaster*). Among the Owls, our family of Collared Scops (*Otus bakkamoena*) are very charming and have bred. The larger species represented are the Forest Eagle-Owl (*Huhua nipalensis*), Brown Wood-Owl (*Strix indranee*), and Brown Fish-Owl (*Ketupa zeylonensis*). The second of these is supposed to be the Devil-bird of Sinhalese folk-lore, though many ascribe the weird cries of this fabulous creature to the Serpent-Eagle (*Spizaëtus cirratus*), of which a specimen formerly lived in the same aviary. A neighbouring cage is occupied by a colony of Brahminy Kites (*Haliastur indus*).

For the size of the collection, we are well represented by the Parrot tribe, having such colourful species as the Blue-and-yellow (*Ara ararauna*) and Red-and-green Macaws (*A. chloroptera*), two species of Eclectus, Leadbeater's Cockatoo (*Kakatoe leadbeateri*), and several of the white types. Lories and Lorikeets are also well represented, the Dusky Lory (*Eos fuscata*) being one of the most valuable. Swainson's (*Trichoglossus moluccanus*) have bred.

Major Lendon may be the cause of our breeding the Pennant's Parrakeets (*Platycercus elegans*). We had two birds which we always thought were of the same sex, or, at any rate, we were too timid to risk them together, knowing the pugnacity of this genus. On Major Lendon's advice, we took the risk and find them to be very friendly disposed to each other, and one of them is already taking interest in the nest box ; we have now, therefore no doubts that they are a true pair. A tragedy has recently been enacted in one of our Parrot nest-boxes. A lovely female (and females are very scarce) of the Great White-crested Cockatoo (*Kakatoe alba*) was mated with a Greater Sulphur-crest (*K. galerita*) and was sitting on a couple of eggs.

Last week a cobra was discovered in the box, having swallowed the two eggs and killed the sitting bird ! This gives some indication of the kind of thing one has to put up with in running collections of birds in the East. The story, however, has a sequel. The cobra was caught and put into a vivarium with another of its own kind, which promptly killed the newcomer !

I regret to say that from the point of view of both Picarian and Passerine birds, we are extremely badly off, even of local types. Of the former our prize are the lovely Buffon's Touracos (*Turacus persa buffoni*)—rather shy birds, and rather inconspicuous, except in flight ; their sudden beauty, when taking to the wing, being all the more pleasing. Our local Brown-headed Barbets (*Thereiceryx zeylanicus*) are at last showing signs of nesting, one of them being now engaged in hollowing out, by hammer blows with his bill, an upright tree stem which has been placed in his cage for that purpose.

Our Passerines include two species of Birds of Paradise, the Lesser (*Paradisea minor*) and Wilson's (*Schlegelia respublica*). The former is represented by two males, and I have noticed that with each successive moult, the yellow in the upper tail coverts becomes increasingly brilliant until a deep amber tinge is finally attained. There has been an attempt by some of the more enlightened members of the advisory committee to construct a battery of aviaries for the housing of a representative series of the local species of smaller birds, as it is felt that visitors to the island, of whom there are very great number in peace time, expect to see, and usually display more interest in, the birds of the country than in imported kinds. With the outbreak of war, however, this matter has had to be shelved, along with many other improvements.

I think, perhaps, in conclusion, a few words on the chief causes of mortality in birds in captivity in the East would be useful, even if only to enlighten others who have collections in this part of the world and who have not facilities for obtaining post-mortem reports. During monsoon weather, our chief morbidity arises from pneumonia and similar complaints. This is especially the case with the smaller Parrots, in spite of apparent adequate housing and shelter. Enteritis is also frequent. Ceylonese Hanging-Parrots (*Coryllis veryllinus*) are especially delicate this way, and no success has attended our efforts with these, although in our private collection as well as in the old Museum collection, these birds got as far as laying eggs. Parasites, both external and internal, especially intestinal worms, are a bugbear in all tropical collections. Temperate climates are well off here, because the frosts of winter kill off all the ova which gain the soil. Our principle here is to shift our birds about as much as possible, meantime digging over and liming the soil in the fallow aviaries. This, unfortunately, is only partly successful, but cuts down infection to a minimum.

Snake-bites account for a few losses as already indicated ; whilst swarms of bees will occasionally decide to annex one of the nesting boxes, and before they are noticed, they will slaughter or maim, or sometimes blind by their stings, a whole heap of inmates of the aviary or even of several neighbouring aviaries.

On the whole, however, aviculturists have an easier time than their fellows in Europe, for the climate is admirable for most aviary species ; except during the rainy period of the monsoons ; for we are not troubled with the necessity for artificial heat. Although our collection is, therefore, only a small one, we are in hopes of enlarging by presentation, purchase, or, better still, breeding from existing stock ; still, at present, we have a cosy and, we trust, happy family.

* * *

NOTES ON THE BIRDS OF TAHITI

By CHARLES NORDHOFF

In his article in the Waterfowl number of the AVICULTURAL MAGAZINE, Dillon Ripley mentions a duckling I received some years ago from Flint Island, which when reared proved to be a fine male Pintail. I believe that a good many stray Ducks from the Northern Hemisphere land on the Pacific Islands, and occasionally, as Ripley suggests in the case of Coues' Gadwall, give rise to a sedentary and eventually inbred race. I have reliable information that Shovelers in winter plumage have visited both the Marquesas and the Tuamotu on several occasions, and that Pintail have been seen on Atiu in the Cook Group, south-west of Tahiti.

Each year in Tahiti, some time in October or thereabouts, three kinds of birds arrive from the extreme northern parts of America : the Bristle-thighed Curlew, the Wandering Tattler, and a Plover (Pacific Golden ?). I often witness the arrival of the Plover in my twenty-acre marshy cow-pasture ; the plumage is dull and disarrayed, the flight-feathers look worn and frayed. And the birds arrive thin and half-starved, though greedy feeding soon restores them. A certain number of Tattlers—barren birds perhaps—seem to remain in the islands the year round ; there is not a month in which, at one time or another, I have not seen these birds.

I hear from Tahiti that the California Valley Quail Guild and I liberated in 1936, have become well established, and that the common sporting Pheasants (eight cocks and twenty hens) I liberated in the same year have increased very satisfactorily. The native birds of Tahiti are in a sad state ; the *Porphyrio* is extinct, as is the small grey, Thrush-like *Omao*, famous for its beautiful song, and the magnificent

large Fruit Pigeon, of which a few existed as late as 1920. We still have our Swift, our Kingfisher, and small green Fruit Pigeon in considerable numbers. The Norway rat, which arrived on ships, and the feral domestic cat are terrible enemies to birds. And add to these a large Australian Hawk, foolishly introduced in hopes that it would feed on rats, but which has turned out a curse to poultry-yards and to the native jungle-fowl, or wild chicken.

The marshy ponds and numerous clear rivers of Tahiti are frequented by enormous fresh-water eels, which attain a diameter of six inches and are most voracious. Our little *Anas superciliosa* has solved the eel problem very neatly. They nest on the bracken-covered ridges, a thousand feet or more above the sea, and rear their young at sea-level, in water too shallow for the submarine tactics of the eel. The ducklings are fetched down on the mother's back, between her wings, and clinging to her feathers with their beaks. This fact is incontrovertible ; on several occasions Ducks have been shot on the wing and the young found still alive and on the mother's back. This has always struck me as most remarkable, perhaps unique. A number of French and American residents tried to do something about a closed season for Ducks, but it is a real problem, as these tropical Ducks seem to breed, and even to moult, very irregularly. In fact, I believe that there are few months in the year when one could be certain that none were breeding.

I have kept these handsome little Ducks both in captivity and full-winged and at liberty about the garden. They are charming birds, active and playful, and fly through trees as neatly as a Carolina or Mandarin. I believe that they would be easy to domesticate, and certainly wish that I had a few here in Santa Barbara. Unlike the Mallard (for which I would not give a dollar a dozen) they don't become lazy and listless when fed about a garden, and do a lot of flying, which they seem to enjoy. The flight is very rapid and Teal-like ; I have often thought that if this Duck proved as easy to breed as I believe it would, it might make the ideal sporting Duck on an estate where the birds are bred like Pheasants. And they are unsurpassed as stayers ; mine made long flights, especially on moonlight nights, and always repaired to parts unknown for the moult which rendered them flightless, but otherwise they behaved as if they considered our garden their home. In fact, they used frequently to bring in a few wild friends to share their grain—always at night.

It makes me smile to think of a vixenish female Carolina who was the undisputed tyrant of the four acres about the house. The Rhode Island Red fowls, even the roosters, were really afraid of her, and when aroused she would attack them in the most headlong manner. Her husband's knees knocked together when she gave him a dirty look ; the *superciliosa* shunned her like a plague, and even my six

big *Porphyrio melanotis* from New Zealand—who ran about the garden at liberty like fowls—avoided combat with the Wood Duck.

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PRE- AND POST-WORLD-WAR PHEASANTRIES

By J. DELACOUR

Up to 1914 France was the country for Pheasant keeping ; there, for nearly three-quarters of a century, Pheasant amateurs were very numerous. They belonged to all classes of people ; some of the most successful were owners of large and luxurious estates while others were humble folk who kept a few pairs in the backyard. But all were equally skilful, enthusiastic, and successful. There were also a few in Belgium, in Holland, in England, in Italy, and elsewhere, but never in the same numbers. In America, ornamental bird breeding was still in its infancy ; the New York Zoological Park, Colonel A. Kuser, and a few others had fine collections, but mostly made up of birds imported from Europe, and Pheasant keeping was very far from what it has been for the last twenty years.

I started keeping Pheasants on a certain scale in 1908, and in 1914 all species then existing in captivity were represented in my large Pheasantry at Villers-Bretonneux. In addition to the commoner species, we had in those days Impeyan, Monals, Satyr, Temminck's and Cabot's Tragopans, Germain's and Grey Peacock Pheasants, Horsfield, White-Crested and Bel's Kalijs, Malayan Argus, Malay, Bornean and Siamese Firebacks, Mikado, Soemerring's, Cheer and Brown Eared Pheasants, Sonnerats and Java Jungle-fowl. Several rare species had been previously kept and reared in France, but since lost. Such was the case of Harting's and Blyth's Tragopans, Yellow-necked and Himalayan Koklass. During the war, most of these rarer species disappeared altogether and it was some years later that they were again imported and re-established. We managed, however, to save a small number of the three Tragopans, plenty of Impeyans, some Grey Peacock Pheasants, and a few others. Among the commoner species, the Prince of Wales' Pheasant was a casualty of the war, never seen since. To this day, also, no more Harting's or Western Tragopans have been imported.

It took four or five years after the conclusion of the war before Pheasant imports, at least imports of rare or aviculturally new species, really started. The first to come were consignments of Impeyans, Satyrs, Grey Polyplectrons, various Kalijs, etc., which began to arrive from Calcutta regularly in 1923, and also Firebacks and Argus from Singapore. The first new and valuable introductions were those I made myself in 1924. I then brought over from Indochina my newly discovered pair of Imperial Pheasants, several pairs and odd

cocks Edward's, Bel's and Rheinart's Ocellated Argus, which had so far been great rarities even in skin collections. Edward's, Imperials, and Bel's were reared the next year and have since been established in captivity.

After a visit to Japan in 1926, I brought home a Mikado cock, wild caught, Versicolor and Corean Ringnecks, Scintillated and Ijini's Copper Pheasants. The first Ocellated Argus did not thrive, but in 1928 and 1929 I brought home several healthy pairs, and young even bred in 1931 and in consecutive years. I discovered Lewis's Kalij in Cambodia in 1927 and brought some home in 1928, where they bred the following year. But this bird always remained very scarce. I still had a pair and three chicks at Clères in June, 1940.

Mr. W. Frost brought for me several pairs of Bronze-tailed Peacock Pheasants in 1931. The same year Mr. W. Goodfellow brought for Mr. Spedan Lewis and for myself two pairs of Bulwer's Wattled Pheasants, one of the marvels of the bird world, while Mr. Floyd Smith, shipped me from Tetchuan a number of Blue Eared Pheasants, some Temminck's Tragopans and Darwin's Koklass. Three breeding pairs of Mikados arrived also from Japan, and a few Lewis's from Indo-China; 1931 was a good year for new Pheasants at Clères.

Meanwhile, the lovely Palawan Peacock Pheasant had arrived and been reared in California, whence I received two pairs. Cheer Pheasants reappeared in 1932 and also Blyth's Tragopans, and we reared many of both species in the following years. Ceylon, or Lafayett's Junglefowl also came for the first time and were easily established. The following years, Mr. Leland Smith received White Eared Pheasants, one of which he was kind enough to send me, Chinese Monals and Dusky Grouse Pheasants (*Tetraophasis*). I also received the last two species and some Blood Pheasants (*Ithaginis*), but they never could be established. I also obtained some Stone's Pheasants (*Ph. elegans*).

Each year rare birds came and provided new blood. The last exciting consignments were those of Mr. Frost who brought me a cock and three hens of the very rare Salvadori's Crestless Pheasant from Sumatra, and another one of Palawans, Bulwers, and Bornean Argus gathered by Mr. Shaw Meyer in the spring of 1939.

Although I expect that my own and other collections in Continental Europe have now ceased to exist to a large extent, there still are some adequate breeding stock of rare Pheasants in England and in the United States. It is to be hoped that every step will be taken to preserve it, as new imports may not be possible before a number of years, when not only the world is at peace, but also when transactions and transport are sufficiently reorganized.

NESTING HABITS OF SATIN BOWERBIRD

By DAVID FLEAY, Director Sir Colin MacKenzie Sanctuary, Badger Creek

(Reprinted from *The Australasian*)

Outstanding among Australian birds are the Bowerbuilders, which, quite apart from the architectural abilities, are accomplished vocal mimics and birds of very lovely plumage. A celebrated member of the family is the Satin Bowerbird, found in heavily forested country down the entire eastern coast of the continent and through the southern ranges of Victoria.

For years the male bird wears the pretty green plumage so characteristic of the female, but adopts at a certain age—no one knowing exactly when—the uniform purple-blue colour so lustrous and beautiful in sunlight.

Associated with his change in colour, the cock Satin Bowerbird becomes exceptionally shy and retiring, and little indeed is seen of him. While the many fascinating aspects of the Bower construction, the bird's play acting and painting and decorating, have received a good deal of attention and study, the actual nesting habits of the Satin Bowerbird are not well known. Thus observations on the hatching and rearing of a young bird this season in the large Lyrebird enclosure at Badger Creek proved of more than usual interest.

Only one previous record of the successful breeding of these birds in captivity is known, and that took place in 1937, in the collection of Mr. Arnold Hirst, a Sydney aviculturist.

The value of observations made under these conditions lies in the possibility of making notes, over the whole mating period, of secretive operations almost impossible to follow in the bush. Among the ferns in the aviary, which is really an enclosure of scrub 100 feet by 50 feet by 13 feet in height, the blue cock Bowerbird had a well-built bower of tall sticks throughout most of the year.

Sometimes it was dismantled, only to reappear on a new site with the usual oddities—Parrot feathers, pieces of blue chocolate paper, and blue glass lying about at the front door.

The green hen bird also took a keen interest in this play arbour, and during September the throaty whirring continuous call of the cock bird hopping about in his bower was heard a good deal. I think a large part of the performance was meant to bring the hen bird down to admire the proceedings.

However, about mid-October, when the hen bird began to build her nest, the cock Bowerbird took no part in proceedings, and not once thereafter did he evince the slightest sign of shouldering the least bit of parental responsibility. He took no part in the duties of

incubation, and was never seen to feed the young birds or to resent intrusions of any kind.

The cock Satin Bird, with his bower, reminded me of the cock Lyrebird and his dancing mound. Both appear to live in a world of make-believe song and dance, leaving the drudgery of home duties to their more soberly plumaged and more practical spouses. In fact, it is highly probable that our decorative cock Bowerbird is not a devoted partner to his mate, but in the wild state a Mormon with several wives.

By 27th October the hen Bowerbird in the aviary had completed her open nest, composed of thin twigs and sticks, about 6 feet above the ground in a mass of upstanding dead teatree. The structure was scantily though strongly made and lined with loose dead eucalypt leaves.

By 29th October it contained two of the large and very pretty eggs forming the clutch—dark cream colour, spotted and blotched with olive brown, cinnamon brown, and slaty grey.

I was rather chary of visting this little home too often, for in the previous year (1940) the bird had nested in the aviary and promptly lost her one and only offspring soon after it had hatched. Each time she was visited the hen slipped quietly off the nest and circled anxiously in the vicinity, "bounding" along the boughs and "peering" anxiously with head and neck outstretched.

Twenty-three days of incubation saw two small fledgelings out of the eggs. Thickly clothed in long greyish down, the baby Bowerbirds appeared healthy and strong. The mother bird uttered prolonged churring notes of anxiety, leaping about in great agitation, when I paid a visit. In spite of the strong partiality for fruit for which Satin Bowerbirds are noted, it was particularly instructive to note that from the beginning the mother bird hunted grubs and insects and fed her family almost purely on an insectivorous diet. Even so, one youngster evidently died in the nest, and I found it thrown out on the ground.

Gradually the lone survivor grew larger and stronger.

On 10th December, aged approximately 23 days, but still remarkably fluffy, with green plumage showing on body and wings, and unable to fly, it left the nest and used its strongly developed legs to hop to a lofty position among the dry twigs of teatree.

This great day in the aviary meant nothing to the bower-playing cock bird, but certainly added "grey hairs" to the hen bird.

When picked up the youngster squalled in the typical churring style of protest peculiar to the species. Immediately this occurred the mother bird flew at me and struck me. She then dropped to the ground and shuffled along in piteous "broken-wing" fashion in an attempt to distract attention from her offspring.

Next and most remarkable performance of all, she ran through a

repertoire of her powers of mimicry, among which, remarkable to relate, was an oft-repeated version of the shrill alarm note of the Lyrebird ! Several other bush voices also came to light, one of which was a most clear rendering of a hearty kookaburra chorus and the mournful wails of yellow-tailed black Cockatoos.

The worried mother Bowerbird was certainly most relieved when I left. The youngster is doing well, and at the moment of writing, some five days after its departure from the nest, it has learned to fly, and now perches in the loftiest branches in the aviary.

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"JUMBO," A GLOSSY STARLING

By GUY FALKNER

I have a green Glossy Starling, the species of which I am not at all sure of. In the book *Birds of Kenya Colony and the Uganda Protectorate* it does not give his exact description—the nearest I can get to it is the description of the East African Blue-eared Glossy Starling—with the exception of practically all the breast of my bird being violet blue, instead of in the description of the Blue-eared bird, which only has the abdomen violet blue. My bird is also considerably larger. Several people who have seen him, and who should know, have all been at sea as to his correct species. He had a sister, but she speared herself on a nail, and is no more. He was hand-reared in Kenya, and came from "up" country (The Sotik) about eight or nine years ago. Like most tame cock birds he is extremely vicious with other birds, especially those of his own or nearly related species—as to getting him a hen, he just kills them as fast as they are procured. Now he is a bachelor for good. He is an extremely good mimic, I give a list of a few of the sounds he makes, though they are not all by any means : Hen laying an egg ; Chaffinch alarm note and part of song ; Goldfinch ; Sparrow ; Jackdaw ; Partridge ; myself blowing my nose ; a double whistle I use for calling my birds, when out in the garden ; the peculiar call of hog-deer (I have a couple of pet hog-deer in the paddock near the house) ; Redstart and all the usual Starling noises, with a few good Shama notes thrown in—learned from a Shama that once had an aviary near him.

It will be seen by the list I give that he is no mean mimic. He is extremely tame with anyone he knows, though very shy of strangers. With those he knows, if he wants to draw attention to himself he will fly at their head and strike it, both by his feet and bill. This is surely a very uncommon trick for a Starling. Had he been a Skua, I could have understood it, but it seems rather unusual for one of the Starling tribe ? He is a glorious sight on the wing, with the sun on him, very quick, but with a curiously beating (I can only describe

it as this) motion of the wings, not unlike a Lapwing sometimes. He will tolerate no bird as large as himself in the garden, and makes the lives of the bigger wild birds, including Jackdaws, an absolute hell ! He spends much of his time inspecting the roof of my cottage, and various old hollow apple trees, carrying nesting material, running along the tops of the aviaries, annoying any bird he can. He will, nine cases out of ten, catch a mealworm or caterpillar thrown up in the air, like a Gull after bread—it is very attractive to see him. He is very obedient, and will go into his aviary if told to do so, at once, far quicker than many dogs kennel up. When let out into the garden for the first time (after being in the house all the winter) he goes off like a shot out of a gun. If one did not know him, one would think he had gone for good—he never reappears until dusk the first day. After the first day he never does this again, and remains flying about the garden and orchard. At first it was rather nerve-shattering to see him disappear, a small speck in the distance. I thought he had "gone". Year after year he does it, and now of course I take no notice. He is a curious bird in one respect, directly the electric light is switched on he wakes up and whistles and chatters to himself all evening, when most of the other birds (barring my Japanese Starling) prefer to have their covers on their cages and go to sleep.

He is terribly jealous ; he has for the past week done his best to get at, and kill, a new bird I have just got, a cream-coloured Sparrow, hand-reared, a delightful little bird and very tame. His food consists of a very little insectivorous mixture ; the bulk of his food is boiled rice, apple, lettuce, and any fruit, mixed with boiled potato. He has stood up to this disgusting mess manfully for eight or nine years, and looks like doing it for as many more. I sincerely hope he does. He is a very affectionate bird, like all the tame Starlings I have ever had, most entertaining and with all one of the most lovely garden ornaments one could wish for. To me, there are few more fascinating things than *really* tame birds flying where they like about the garden and grounds, and surely no better garden ornament ? I don't like birds kept in aviaries, but I *loathe* them kept in cages. Nearly all my birds I have had are, at some time or other, allowed to fly loose during the day, but so many fight that it means if one has several they can only come out singly for half an hour or so at a time. They are so jealous of each other that they cannot be allowed out more than one at a time—a bore.

One would think that the garden was big enough to hold more than one bird at a time—but apparently it is not. I think, perhaps, one of the most beautiful liberty birds I had was a Formosan Magpie. To see this great ricketts-blue "Crow", with a long Pheasant's tail, flying up to the top of my cottage chimney and then sailing out across the garden, was a sight not easily forgotten. Glossy Starlings, like

most other birds, are great bathers; mine soaks himself several times a day. I keep a bit of turf in his cage for him to play with. He is seldom in his cage, and only uses it as a sort of restaurant and bedroom. As I write this he is chasing a Jackdaw across the garden assisting it home as rapidly as it can go. "Home John and don't spare the horses!"

I may add that all my tame birds really *do* know their names and answer to them when spoken to. I put the intelligence of the average bird very high, especially the insectivorous birds.

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THE FAIRY BLUE-BIRDS

By JOHN YEALLAND

There are seven species of the Fairy Blue-birds; yet only one is at all well known to aviculture.

Three species, *Irena cyanogastra*, of Luzon; *I. melanochlamys*, of Samar and Leyte, and *I. tweeddalii*, of Palawan, Balabac, and Calamianes are representative of the Philippine Islands. *I. cyanea* is found in the Malay Peninsula; *I. crinigera*, in Borneo and Sumatra, and the best known, *I. turcosa*, in Java.

I. puella, said to be fairly common and to which the common name was originally given, has a large and scattered range including S.W. India, Ceylon, the Andaman and Nicobar Islands, and from the Sikhim and Assam regions of the Himalayas, through the Arakan and Pegu districts of Western Burma to the Tenasserim area of Thailand.

The April, 1913, number of *Bird Notes* contains an account of the genus by Mr. Page and an excellent coloured plate of *I. turcosa* by Mr. Goodchild.

Advertisers used to offer Fairy Blue-birds as if there was but one species: I think that the one always offered was the Javan, *I. turcosa*. The great beauty of the males of this species with their enamelled turquoise upper plumage and velvet black under parts is well known. The proportionately small feet and the long tail-coverts, which almost completely hide the tail, are curious features of this bird.

I believe it is correct to say that no species of Fairy Blue-bird has yet been bred in captivity, but *I. turcosa* has nested in this country and has hatched young at the Duke of Bedford's aviaries and also, if I remember rightly, in Lady Wavertree's collection, but in each instance the young were lost at an early age.

The pair in the Duke of Bedford's collection thrived on a diet of chopped sweet apple, pear, and grapes dried off with a little crumbled

sponge-cake and proprietary insectile food : various ripe berries, a few mealworms and fresh wasp larvæ were also given. They lived throughout the year in a movable Parrakeet aviary which had its shelter warmed in winter. They were allowed out of doors on all but the worst days and, though they were not very active, they spent a good deal of time outside. They seemed not to be delicate and were, on the whole, rather easy to keep. They nested several times, and a number of eggs, which, if I remember correctly, rather resembled those of a Blackbird, but for being much smaller, were laid. Their first nest failed because it was so poorly constructed, that the eggs soon fell through it, so thereafter we fixed up old Blackbirds' nests and other ready-made arrangements of which the hen readily approved. I do not think that she ever laid clutches of more than two eggs, and this may be the normal clutch, for it is said by Oates (*Fauna of British India*) of *I. puella* that "the eggs are generally two in number".

The hen sat well and seemed up to a point a good and devoted mother, and exactly why the young were lost was hard to judge, for, of course we did not look into the nest until it was evident that no life remained in it.

The parent birds were sent away before a third season came round : I was sorry to see the going of such beautiful birds, and, even if there was little chance of their ever rearing their young, it might not have been too difficult to hand-rear some of them. In general habit we found these birds rather sluggish, but none the less quick in their movements, and I have seen them catch passing wasps and swallow them with very little preliminary crushing.

Oates has observed that the young of *I. puella* are like the female, and that the males change into adult plumage without a moult.

The young males of *I. turcosa* are exactly like the females, and in the one or two cases I have known my impression is that they moulted into adult plumage, and did not assume it by any attrition of the tips of the feathers.

Almost all the habitats of the Fairy Blue-birds are, or have been and will, no doubt, be again, the scenes of considerable fighting. The harm done to wild life by the processes of modern warfare can never be known, and the subject is too sad to dwell upon.

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THE BIRD HOUSE IN THE LONDON ZOO IN WAR TIME

By DAVID SETH-SMITH

The reference, in the last number of the Magazine, by Dr. Hopkinson, to the two Amethyst Starlings which he sent to the Zoo fifteen and twenty-one years ago, both of which are still hale and hearty, has suggested to me that a few notes on the other birds there, mostly very old stagers, may not be without interest though for length of life none can beat the Amethyst hen of 1922, which was, I believe, the first of her species to arrive in this country.

In 1941 part of the roof of the Bird House was demolished and the heating apparatus was put out of action for a fortnight during cold weather, to which misfortunes must be added the complete absence of fruit since the early days of the war. Taking this into consideration, I think the greatest credit is due to Senior Keepers Tanner and Raggett for the really fine collection that has been maintained. It is true the Birds of Paradise have succumbed, no doubt owing to the lack of fruit, for they were all old birds and could not take kindly to the change in diet, but others that one regarded as fruit-eaters, such as Toucans and Touracos, have not only survived but are in first rate condition. Of the former there are four whose years in the Bird House range from 14 to 7. There are seven Touracos, the oldest, a Donaldson's, having been there 18 years. A Bell-bird which died a few weeks ago had been in the house for 15 years.

There are seven Yellow-winged and two Purple Sugar-birds, all old timers with 8 to 12 years to their credit, a Friar-bird 12 years and two Sun-birds of 8 and 9 years.

Of Hornbills there are five specimens including "Baby", the Great Indian Hornbill which, though really a baby on arrival, has now honoured the Bird House with its presence for over 20 years. It was fond of feeding its keeper with grapes when there were any to feed him with; boiled carrot does not quite take their place! There are two Grey-winged Trumpeters which follow one around like dogs and look none the worse for their 12 years' residence in Regent's Park, neither does a Superb Glossy Starling after 14 years, a Nonpareil Bunting after 11, or a Rose-coloured Starling after 17.

The Bird House is really fairly well stocked, far better than one might expect to find it after four years of war, during which no birds have been imported to replace losses. One misses the vegetation in the large central aviary which showed off to such perfection the gay crowd that used to occupy it. Presumably lack of labour is responsible for the dreary appearance. The roof of this aviary was smashed by an incendiary bomb during the blitz of 1941, but it spluttered out

harmlessly upon the floor ; it left a gap in the netting above through which the last of the Humming Birds escaped.

The outside cages are fairly well filled. Kookaburras, of which there are seven, greet the visitor with infectious laughter, while a flock of African Weavers build there in their clever fashion, just for the sake of building.

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THE PARROT TRIBE IN CEYLON

By W. C. OSMAN HILL, M.D., F.Z.S., etc.

(Reprinted by kind permission from "*Loris—A Journal of Ceylon Wild Life*")

The Parrots form a very well-defined group of birds, set apart from all others to a much greater degree, even to the uninitiated, than are most bird orders from each other. They are placed between the Owls on the one hand and the Cuckoos on the other, though displaying certain affinities with other groups also. The nearest approach is perhaps to the Owls, and is attained by the peculiar Owl-Parrot (*Strigops*) of New Zealand, which in addition to looking like an Owl, is nocturnal in habit.

The Parrot tribe (*Psittaci*) includes all the Parrot-like birds, i.e. not only the typical Parrots like the familiar African Grey or the Green Amazons, but also the forms known in common speech by such varied names as Parrakeets (including Budgerigars and Lovebirds) Cockatoos, Lories, and Lorikeets (or Loriquets). Some of these names are of no scientific significance whatever so that some explanation is necessary.

1. A *Parrakeet* is merely a small Parrot, the name generally being applied to the small long-tailed species, those with short or square tails being referred to as Parrots even though they are of minute size, e.g. Lovebirds and the Hanging Parrots, of which more anon.

2. *Cockatoos* are large forms easily recognized by their erectile crests, though also possessing important anatomical differences from other members of the group. The anatomical features, however, occur in a small group of minute species which are without a crest. These are the so-called Pigmy Parrots (*Nasiterna*) of New Guinea, and would be better referred to as dwarf Cockatoos. On the contrary, some species having a crest are not Cockatoos in the anatomical sense, e.g. the familiar aviary bird called the Cockatiel (*Leptolophus hollandicus*), which is only a modified Parrakeet, and the rarer Uvaean Parrakeet (*Nymphicus cornutus*) of New Caledonia.

3. *Lories and Lorikeets*, the latter being merely small (often long-tailed) editions of the former, constitute a much more compact and well-defined group which differs from all the ordinary Parrots

(including all those mentioned so far) by virtue of their feeding habits and the associated structural modifications. The Lories are all honey-feeders and their digestive apparatus is modified to assist in procuring and absorbing a liquid or semi-liquid diet. The ordinary seed-eating Parrots and Parrakeets have a dry mouth and a tongue shaped rather like the end of a human finger, with the nail placed obliquely at the tip. Their stomachs are of the ordinary avian type, i.e. forming a strong crushing gizzard. On the contrary the Lory family are provided with wet mouths and the nail-like portion of the tongue is converted into a brush, so that they are often spoken of as brush-tongued Parrots. Their stomachs are of simple sac-like form, resembling thus a mammalian rather than an avian stomach. There are also some differences in the shape of the bill. Lories have relatively weak beaks, narrow from above down and from side to side but elongated in the other dimension. The upper mandible is not so strongly hooked as in seed-eating Parrots and lacks the file-like markings on its biting surface.

The reason that I have gone so fully into the differences between the seed-eating and the honey-eating groups of Parrots is on account of the fact that Ceylon is the home of a species which is intermediate between the two. This bird, related species of which are found all over South-Eastern Asia, is called in Sinhalese *malichchiya* and in Tamil *kanni-kili*. It is popularly referred to as the Ceylon Loriquet, which is in some ways unfortunate, because structurally it is no Lory, though in habits the bird certainly agrees with them, being a honey feeder and possessing, as a result, a simple saccular stomach instead of a gizzard. In other structural features, however, it is a typical Parrot and for this reason, and to avoid confusion with the true Lorikeets, I consider the alternative name of Hanging Parrot much more suitable. The term is based on the peculiar habit these birds possess of roosting upside down like a bat, hanging by means of their feet to small twigs, a habit which has led the Germans to call them *Fledermaus-papageien*, i.e. "Bat-Parrots."

The Ceylonese species of Hanging Parrot (*Coryllis beryllinus*) is peculiar to the Island, though it differs only slightly from the Vernal Hanging Parrot (*C. vernalis*) of the Malabar tract and also of the north-east of India. It is the smallest of the Parrot tribe in Ceylon, measuring $5\frac{1}{2}$ inches in total length. In general colour it is bright leaf-green, brighter below than above. Like all Hanging Parrots, it has the rump feathers elongated and crimson in colour. There is a reddish-orange cap on top of the head, and in the adult male the throat has a delicate sky-blue tinge. Young birds are duller in colour and lack the crown patch. The Hanging Parrot is a very common bird, though unobtrusive, since it keeps to the tree tops. It is recognized by its high-pitched chatter rather than by sight. It will

be found feeding on the honey from the flowers of the coconut and other palms, though it has no brush to its tongue. It breeds in the hollow stems of trees, especially dead arecanut palms, which it prefers to enter from a hole at the exposed dead stump. It lines its nest with chippings from the dead tree and then with a high pile of nibbled-off edges of leaves, which it carries to its nest, loaded up beneath the erectile crimson rump feathers, in the same manner as the African Lovebirds of the genus *Agapornis*. The females are very curious sights when so loaded, but the male may also assist with the actual leaf-cutting.

Hanging Parrots do well in captivity, but must be kept in pairs only or fighting to the death will ensue. They must on no account be fed on seed, but on a sop made of stale bread soaked in sweetened condensed milk, to which vitamins must artificially be added, unless the diet is supplemented in other ways. Soft ripe fruit should also be given. I have had them attempt to reproduce their kind in captivity, building a nest in an upturned drain pipe or metal rain-water pipe. They have gone as far as laying eggs, but there has been no success in hatching out live babies.

There are four other species of Parrots in Ceylon, all falling into the category of "Parrakeet", as they are small to medium in size and provided with long tail feathers. They all belong to the genus *Psittacula*, and are not far removed from the African Grey in general structure.

These are in order of size, commencing with the largest, as follows :—

1. Alexandrine Parrakeet or Larger Ceylonese Parrakeet (*Psittacula eupatria eupatria*).
2. Ring-necked Parrakeet or Smaller Ceylonese Parrakeet (*P. krameri manillensis*).
3. Layard's Parrakeet (*P. calthropae*).
4. Western Blossom-headed Parrakeet (*P. cyanocephala cyanocephala*).

All these are referred to indiscriminately in Tamil as "*kili*" but Sinhalese distinguish them respectively as *labu-girawa rata-girawa*, *alu-girawa* and *panu-girawa*.

Of these, Layard's Parrakeet is a species peculiar to the Island, where, like many others of like nature, it is confined to the central hill region.

The Alexandrine is a widely distributed species, but the typical sub-species is confined to Ceylon and Malabar. The Ring-neck and Blossom-head are also widely distributed and the sub-species found in Ceylon are also found over the greater part of India, other races occurring in Malaya, etc.

All these birds are typical seed-eating Parrots and thrive readily

in captivity on various seed mixtures supplemented by fruit, nuts, and chillies. They can all be trained to talk. An Alexandrine in my possession has as large a repertoire as any talking Parrot I have ever come across. All the species have been bred in captivity, but the essentials for this are, (i) plenty of flight space, (ii) keeping no more than a single pair in one aviary. As regards the amount of space required, that depends on the size of the birds. Layard's need a flight of at least 12 feet long; the width of the cage matters little, but the higher the better. Alexandrines need at least 24 feet of flight and more if possible.

All four Parrakeets are easily distinguishable from one another in the adult state, but more difficult whilst still in juvenile plumage.

The Alexandrine and Ring-neck are green with a half-collar round the front and sides of the neck, supplemented by a pink half-collar at the back, the two half-collars overlapping at the sides. But the Alexandrine is a larger bird with a more prominent pink collar, a relatively much larger bill, and an additional purplish-crimson patch on the front part of the wing. The females have little or no collar in either species, but the size differences and the wing patch apply as in the males. Young birds resemble adult females. Layard's Parrakeet is easily recognized by its slaty coloured head, followed by a bright green collar. The lower back is more of a lavender tinge. The sexual and age differences are indicated by colour changes in the bill. Young birds have a pinkish-orange bill which later turns to black. It remains black in the adult female, but in the male it changes to a bright rose-crimson.

The Blossom-head also starts life with an ashy head, but this changes to a brilliant plum-colour in the adult male, who also develops a crimson wing patch like the Alexandrine. Females are easily distinguished from Layard's by the absence of grey on the back, by their smaller heads and relatively less developed bills, which are yellowish-orange in colour.

ADVANTAGES AND DISADVANTAGES OF HAND REARING BRITISH BIRDS

By V. A. V. CARR

(Continued from p. 90)

Some of the most difficult of the Softbills family to keep in captivity in perfect natural condition are those usually associated in their natural state with streams, ponds, swamps, and the like. Included in this group I mention Sedge, Reed, Marsh, Aquatic Warblers, Dipper, and the Kingfisher.

The smaller species named in this list build their nests from 18 inches to 3 feet above the ground, usually in reeds, meadowsweet, and other rank growth that one usually associates with damp places.

The Reed Warbler differs from his cousins in the architectural structure of the nest, being completely suspended between three, four, and sometimes five straight, moderately thick stems of rushes, and on a rough day when these tall upstanding reeds are wafting from side to side the nest also takes such a directed course in a sometimes frightening manner. Frightening from the point of view of fear of the worst befalling the clutch of eggs or the brood of youngsters.

The Marsh Warbler, a rare species and only found in certain localities, is of the same drab colouring as the Sedge and Reed Warbler. It is well known as a mimic of other birds' songs and notes, and is usually found in close proximity to the Sedge and Reed Warbler in such localities—but it does not follow that where the Sedge and Reed Warbler frequent so also does the Marsh!

All these Warblers make charming aviary inmates, provided their surroundings contain as far as possible a similarity to their natural haunts, and if a large proportion of live food in the form of mealworms, gentles, and fresh live ants' eggs are provided for their main diets, in warm conditions as regards housing accommodation in the winter they do very well.

Like most Softbills, one disadvantage due doubtless to the artificial surroundings of their man-made habitations, their perches, their lack of varying food, and their cool dry aviaries, their feathers get very brittle, and if they do break off it is not until the spring of the year that they are able to replace these stumps of feathers by the perfect fully matured ones.

The Aquatic Warbler is very rare in this country, and only an occasional visitor to these Islands, and it is doubtful if this bird has ever been kept for any length of time in this country. It is closely related to the Sedge Warbler in every respect.

Generally speaking the larger the species of bird the easier it is to

keep—but I wonder if this could apply to the Dipper as compared to the, shall we say, Sedge Warbler? From what little experience I have been able to gain in the years prior to this war when foodstuffs were more easily procured and travel was not restricted in order to procure them, the Dipper could be one of the finest aviary inmates, both in setting and personality, if a lot of trouble was taken with this species in studying its wants and being in a position to supply them immediately. It is one of the most beautiful birds, recognized by its white throat and chest, contrasting with dark brown upper surface and head; breast chestnut; belly black, and tail short. It has a cheerful little song, very shrill, and can be heard all the year round, and clearly resembling the rippling music of the brook. It is only found near rivers, and in the breeding season is found in shallow, swift-running streams, favouring mills, waterfalls, both natural and man-made. It feeds on the larvae of water beetles, dragon flies, mayflies, and will also live on small water snails, water fleas, and other aquatic life.

In captivity the Dipper will eat mealworms, gentles, and ants' eggs, and certain ingredients of foods found in insectile proprietary brands of these ingredients closely resembling anything they expect to find in their natural haunts. This bird is certainly worthy of a lot more study in confinement, as it is hardy from the point of view of climatic conditions. Its nest, constructed like a huge Jenny Wren's, is usually built on a ledge very close to water. I have found their nests in banks of any particular river they inhabit, under waterfalls, having to fly through the spray in order to gain access, under bridges, on water wheels unused for some years, and in any part of the wheel-house where a site, such as two bricks removed, gives a sufficiently wide ledge to contain the rather unwieldy structure of the nest. The eggs are white and the youngsters are mottled in plumage until their first moult, when their adult plumage is attained.

It is said, although I have never actually observed such a practice, that the Dipper will walk along the bottom of the shallow water, completely submerged, using his long claws and toes to hold on to the stones in order to guard against being swept away by the current, in order to find his food in the food of larvae and maybe fishes' spawn.

Not many people have been able to rear our native Kingfisher, due, no doubt, to his insatiable appetite for fish. It really is a most handsome bird when fully matured, but its nest is one of the most insanitary places that God's creatures have ever used. They always use a hole (burrowed out by the bird) which goes horizontally into the perpendicular bank of a stream.

The nest consists wholly of fish bones and when the young are born their excreta is never removed to any large extent by the parent birds, and the result is a shocking foul-smelling stench of rotting fish.

If plenty (and several hundred a day may suffice) of live small minnows were given to a captive Kingfisher—one could be sure of keeping him healthily.

(To be concluded)

* * *

REVIEW

THE LIFE OF THE ROBIN. By DAVID LACK. Messrs. H. F. and G. Witherby, Ltd., 326 High Holborn, London, W.C. 1. Price 7s. 6d.

Mr. David Lack has produced a remarkable book, the result of four years' close observation. Its two hundred pages are packed with interesting information and a considerable number of new, and in some cases, almost startling, facts are made known. The author tells not only of what the Robin does throughout the year, but how and why he does it. Every aspect is viewed—curiosity, significance of song, display, fighting, boundary disputes, sexual selection, courtship, nest, eggs, young, significance of territory, migration, food, enemies, expectation of life, tameness, adventures with stuffed Robins, etc.

An item of especial interest to aviculturists is the author's success in breeding Robins in aviaries. On pages 19–21 he writes :—

“Nevertheless, after three years of study, I realized that certain aspects of behaviour would become much clearer if Robins could be induced to nest in captivity. For this purpose two aviaries were constructed, each 30 feet long, one 12, the other 20 feet wide, and each over 6 feet high. They had good grass turf, extensively planted with evergreen bushes, while branches were nailed to the walls higher up. Shelters were provided by wooden sheds and packing cases, half filled with brushwood. The birds were fed on Allen Silver's special insect mixture, together with large numbers of live mealworms, of which they are particularly fond. The food trays had wooden shelters over them to keep off the rain. Drinking baths were readily provided by upturned dustbin lids. The chief danger in an aviary is from rats, and to guard against them the wire was sunk on every side to about a foot below the surface and, when the earth was filled in, large quantities of broken glass were added. The rats did not get in, though extremely numerous round about.

“Two pairs of Robins were placed in each aviary, in which lay the risk, for every experienced aviculturist who was consulted assured me that if two pairs of Robins were placed in the same aviary one pair were certain to kill the other. Indeed, a captive male would sometimes kill his own hen. On the other hand, observations discussed later led

me to expect that, provided the birds were given sufficient room in which to escape, one would not kill another, and that gradually their animosity would decline. The latter was what, in fact, happened and, while I was ready to remove one of the pairs at once if they showed any sign of being hurt, this was never necessary. Presumably other aviculturists have used much smaller aviaries.

"The birds remained in good condition and in each aviary one of the pairs successfully reared five young, for which a prodigious number of mealworms were required, as the parents would feed their young only on living food. As soon as the young were able to fend for themselves, they and their parents were let out. A year and a half later at least two of the adults were still alive in the wild state. Apparently these were the first Robins ever to breed in captivity in Britain."

Mr. Lack began his study in January, 1935, so that his aviary breeding experiments were presumably carried out in 1938.

A. A. P

* * *

NOTES

NEWS OF MR. SHAW MAYER AND MR. FROST

I think there must be many members of the Avicultural Society who will be glad to hear that on 10th September I received a long letter from Mr. Shaw Mayer and that he is, so far, safe and well. He is in the Army somewhere in Australia and, he writes, a long way from his home of Sydney. He asks to be remembered to all friends, and says he often thinks of the times here, which he says seem sacred now. He had recently heard from Mrs. Frost, who is in Western Australia with her son Michael. Mr. Frost is interned as a civilian at Changi Camp, near Singapore Island. I had written to Mr. Shaw Mayer last Christmas, and as I never had a reply I wrote to his Mother last February, and this is the result, as she forwarded my letter to him.

He says he had just received the Jan.-Feb. Magazine and read with great pleasure Monsieur Delacour's article on Edward's Pheasants and Miss Chawner's account of the doings at Leckford during 1942.

He asks specially to be kindly remembered to Mr. Ezra, Mr. Seth-Smith, and Mr. Whitley and all good friends.

E. MAUD KNOBEL.

INTERNATIONAL BIRD PRESERVATION

Though naturally hampered in its activities, the fact that the International Committee for Bird Preservation continues to carry on and is preparing for its post-war work was evidenced by the internationally representative and well attended meeting of the British and Polish Sections held in the Hall of the Royal Geographical Society on 25th September under the chairmanship of Mr. David Seth-Smith. Dr. Jul Borucki spoke on the various aspects of bird preservation in Poland before the war and the difficulties and problems of the future. He drew attention to the fact that Poland and Czechoslovakia in establishing the international reserve in the High Tatras had set an unique example of international collaboration.

Monsieur Jean Delacour, President of the Committee, sent a message from New York to the meeting pointing out the widespread adverse effect war would have on bird life throughout the world and stressing the necessity for the active work of the Committee so soon as peace is restored. He concluded by stating "The love of nature in general and perhaps of birds in particular, will always remain one of the strongest

links between all men, one which nothing can completely sever". Mr. Walter Higham, who is well known for the high quality of his colour photography, showed a film which undoubtedly surpassed anything of the kind ever seen. In a series of scenes of unrivalled beauty and perfect photography he showed varying types of the British countryside with the birds that are to be found there. The soft loveliness of a blue-bell wood, the grandeur of the snow mountains in Scotland, the particular charm of the fens, the rugged beauty of the Bass Rock, and the peace of parkland and country lanes epitomized what every country-loving Briton carries in his heart to whatever part of the world he may go. Over 32 species of birds were shown from the House Sparrow (a bird neglected by bird photographers) to the Kingfisher, most brilliantly plumaged of all British birds. In moving a vote of thanks to Mr. Higham, the Belgian Ambassador stated that he had seen many nature films but none so good as this. His Excellency pointed out the great value of international nature preservation, making special mention of the International Conference for the preservation of the Fauna of Africa, and also the proposed Conference on the Preservation of the Fauna of the Pacific which had to be abandoned on the outbreak of war, "but," he concluded, "as soon as we clear the Japanese out of the Pacific we shall be able to proceed with these more important things."

LONG-LIVED PURPLE-WINGED SUGAR-BIRD

I have just lost a very old friend in the shape of a Purple-Winged Sugar-Bird. He was adult when I purchased him some 10 or 11 years ago, and appeared in perfect health when covered up for the night. Alas! only to be found dead on the floor of his cage next morning! He was a most intelligent little fellow and would squeal in his funny little way whenever he espied a small fly in the window, until it was caught and given to him, and until this happened there was no peace. He also adored sponge cake, but only if quite new! He had no fear of my dogs and was absurdly tame. I lost a similar specimen in 1925 that I had kept for 14 years, he also was adult when given to me, by my brother-in-law, the late H. D. Astley, so we never knew his real age. It strikes me as being very interesting to think that one can keep these lovely little birds for so many years in happy captivity; for that both my specimens were happy and contented I have no doubt whatsoever, and I often wonder if in their wild state they would have survived so long?

E. KATHLEEN GODDARD.

ACCLIMATIZING AMERICAN ROBINS

I do not remember seeing mention in the *AVICULTURAL MAGAZINE* of Lord Northcliffe's experiments in acclimatizing the American Robin. The following extract from *The Countryman*, Autumn, 1943, seems of sufficient interest to justify reproduction:—

"About a generation ago, at his home at Sutton Place, in Surrey, Lord Northcliffe made a prolonged experiment in the introduction of a new bird to England. A good deal was written about it at the time, but the end, I think, was never reported. Lord Northcliffe was a great lover of birds, and when he visited America became especially interested in the American Robin, which is in reality a Thrush—the Pilgrim Fathers dubbed it Robin because of its ruddy breast. Several pairs were imported, and they bred freely in a large aviary set up by the spacious lawn in front of Sutton Place. After the first year, eggs from the captive pairs were placed in the nests of Blackbirds and Thrushes, and were duly hatched. The young flourished, and, finally, quite a considerable flock would collect daily to a feeding ground on the lawn. All went well till late October, when every single free bird would clean vanish; and all attempts to trace their whereabouts failed. A few vague rumours of their appearance elsewhere could not be corroborated. Some of the young birds which bred in the wild were transferred to cages suspended close to the nests and fed through the bars by the foster-parents; but most of these died about the same date as the others disappeared. The instinct of migration is very strong in the American Robin—as in its cousin, the Fieldfare—and the presumption is that, when the due date came and the arc of the sun grew lower, these birds were irresistibly compelled to fly to the south. There are bird-watchers in all countries, and as no news was

ever received of the appearance of the Robins in the southern countries, it was supposed that they all perished over the sea. The experiment was carried on for a number of years—quite how many I do not remember—but never did a free bird stay or return or leave trace. A few caged birds were kept for a while, but the larger experiment was surrendered. The melancholy end has at least proved that the instinct of migration in a migratory species is irresistible, and more or less independent of geographical conditions. One Sutton Place gardener, an excellent observer, prophesied that the caged young would be poisoned by their foster-parents when they were fully fledged, and when these birds died he alleged that hard bits of yew leaf were found in the crop.—W. BEACH THOMAS.

"[Another newspaper proprietor made an experiment with birds. Arthur Pearson, Northcliffe's rival, tried keeping hundreds of rare birds in an immense aviary. But, says his biographer, 'he found it impossible to keep hundreds of varieties together and, on most days, at least half a dozen were killed through fights.'—EDITOR, *The Countryman*.]"

ARTHUR A. PRESTWICH.

STALINGRAD HOSPITAL LABORATORY FUND

A fund is being raised in Britain to equip a hospital in Stalingrad, to express in a permanent form the British people's gratitude to the defenders of Stalingrad who have made such a great contribution to the final victory of the United Nations. It seems appropriate that British scientists should equip the laboratory of this hospital and a special fund is therefore being raised, under the auspices of the Joint Committee for Soviet Aid, for this purpose. Leading British scientists have associated themselves with this appeal and members of the Avicultural Society are asked to support this particularly suitable form of expressing their appreciation of the efforts of the Soviet people. Donations should be sent to: Stalingrad Hospital Laboratory Fund, The Association of Scientific Workers, Hanover House, 73 High Holborn, London, W.C. 1.

* * *

CORRESPONDENCE

THE HIGH PRICE OF BIRD SEED

Friday the thirteenth! To-day I have paid the exorbitant sum of 27s. 6d. for a pint of very inferior plain Canary—and not pure seed at that. The fact of my doing this is not due to my being severely bitten by the Squander Bug, but of necessity because two pairs of Red-faced Lovebirds steadfastly refuse to partake of any seed other than Canary. For some months I have been paying prices ranging between 17s. and 22s. 6d., but this latest is easily a "new high"—almost equivalent to the price of 1 cwt. in days gone by!

Supplies of canary, white millet, white sunflower, etc., are, of course, exceedingly short, but surely not sufficiently short to justify the profiteering that must be going on. There are still small stocks available and only last week offers were invited for 5 cwt. canary; and judging by the ridiculously high prices offered by traders this little parcel will fetch as many hundred pounds.

The following are the current prices offered by "The Trade":—

| | | |
|-----|----------|-----------------|
| £98 | per cwt. | White Millet |
| £94 | " " | Yellow Millet |
| £94 | " " | Plain Canary |
| £55 | " " | White Sunflower |
| £30 | " " | Black Sunflower |
| £46 | " " | Hemp |

Presumably merely to enable them to add an infinitesimal quality to their various otherwise almost useless "mixtures".

It seems unlikely that the position will improve for some time to come. The Ministry of Food can hardly be expected to bother about the import of bird seeds. We hear that shipments of wine are being made from Algiers—the wine being used as ballast. Surely, provided supplies of seed are readily available they would make just as good, if not better, ballast? When consignments do eventually arrive it is to be hoped that prices will be controlled, and that they do not fall into the hands of "Speculators".

It is, as yet, very early days; when, however, the situation improves still further could not the Council of the Avicultural Society make representation to the Ministry of Food?

ARTHUR A. PRESTWICH.

CHELMSFORD ROAD,
SOUTHGATE, LONDON, N. 14.

HYBRID LOVEBIRDS

Fischer's \times Black-cheeked Lovebird. First breeder, E. Alder, September, 1941.

The above should be added to Dr. E. Hopkinson's invaluable Breeding Records. Mr. Alder tells me that four eggs were laid of which three hatched—two young being fully reared. Last year eggs were produced by this pair, but proved to be infertile. In June this year one of the hybrids got through into the next aviary and immediately paired with a Masked Lovebird hen. Five eggs were laid and five hatched, but the last to hatch was over a week after the first, and died. In a recent letter Mr. Alder writes that the remaining four are doing well and will soon be leaving the nest.

ARTHUR A. PRESTWICH.

CHELMSFORD ROAD,
SOUTHGATE, LONDON, N. 14.

* * *

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CHANGES OF ADDRESS

- Capt. B. H. DULANTY, to The Fisheries Cottage, Chorley Wood, Herts.
 HAROLD KING, to 80 Bedale Road, Sherwood, Nottingham.
 F. W. SHAW MAYER, to "Wulfruna", 8 Wandeen Avenue, Beecroft, N.S.W., Australia.

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| F. Shaw Mayer . | 1 | 0 | 0 |

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WANTED

Lovebirds, all species and hybrids.—A. A. PRESTWICH, Chelmsford Road, Southgate, N. 14.

The Lovebird Family, H. T. King; *Avicultural Magazine*, 1895, 1897-99, 1930-32; *Aviculture*, vol. ii; *Foreign Birds*, vols. 1-7; *Parrakeets, their Care and Breeding* (pub. U.S.A.).—A. A. PRESTWICH, Chelmsford Road, Southgate, N. 14.

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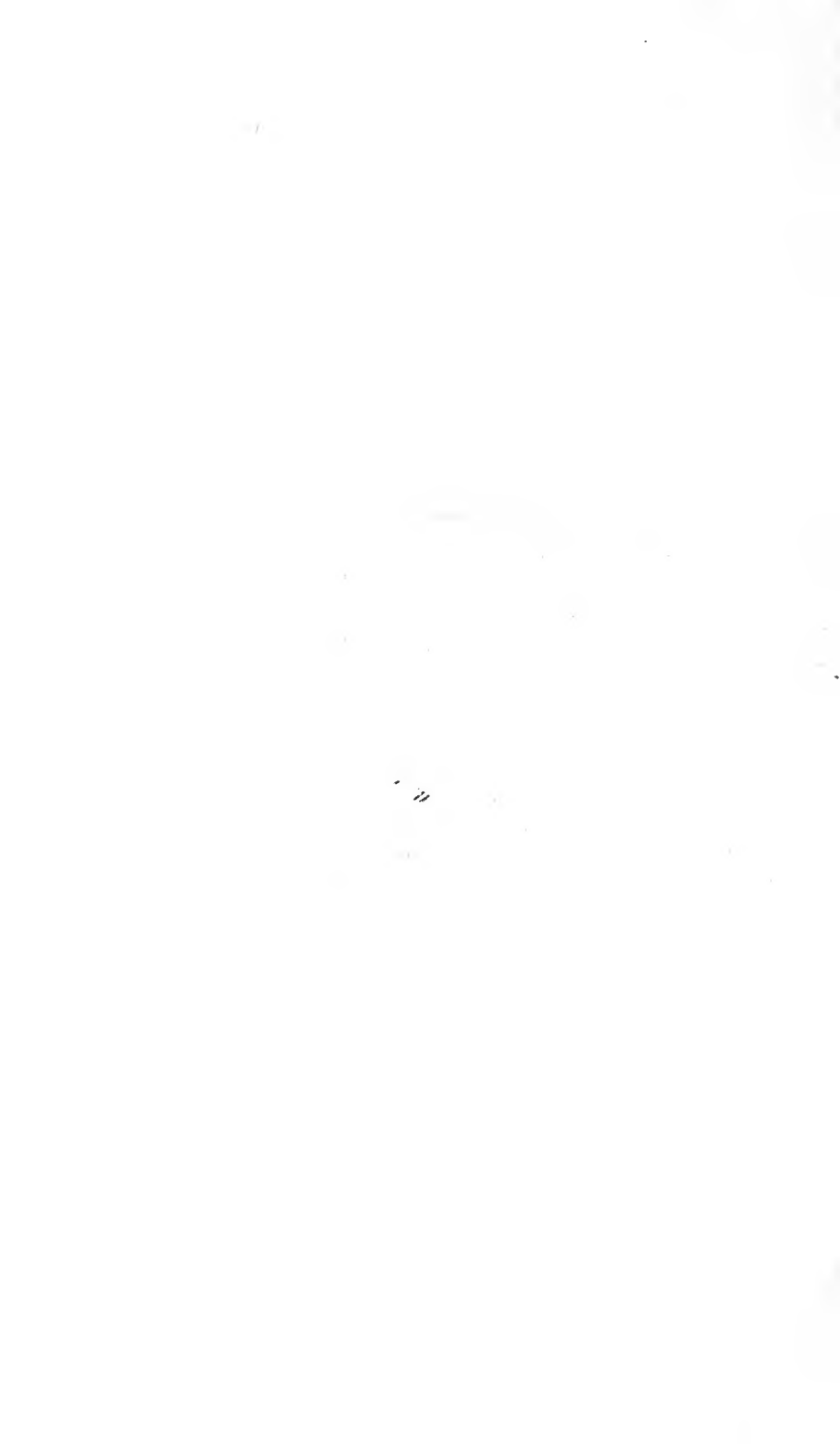
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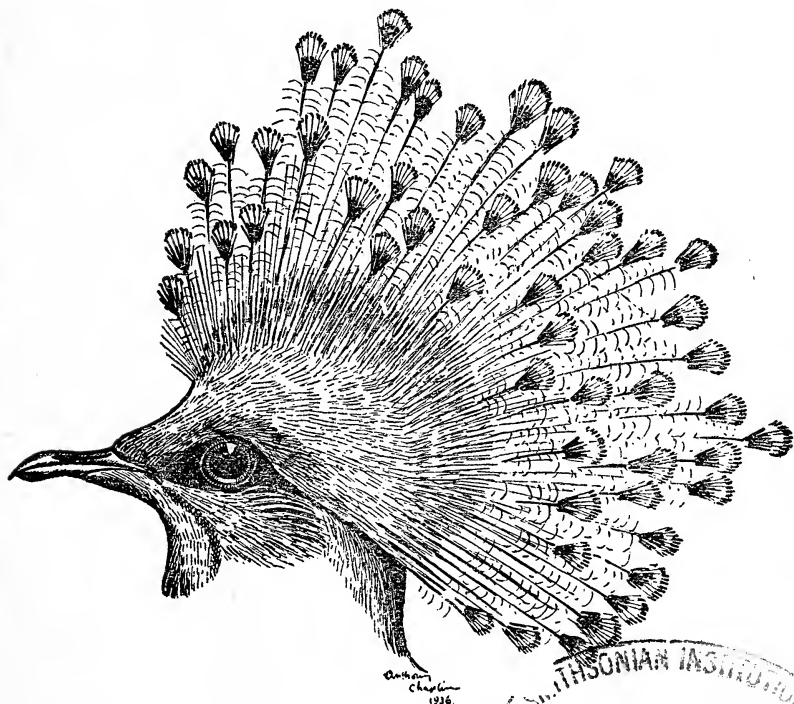
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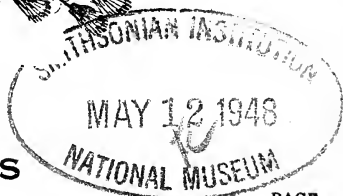




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THE AVICULTURAL SOCIETY

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FIG. 1.—ADULT LESSER ADJUTANT (*Leptotilos javanicus*) to show the curious tuft of hair-like feathers on the occiput.

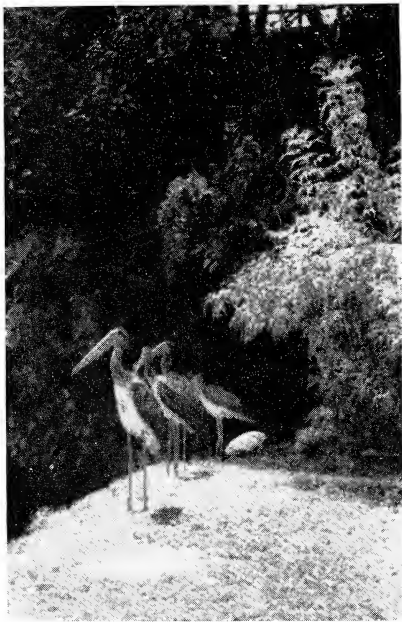


FIG. 2.—FOUR FULL-GROWN HYBRID STORKS (*Ibis leucocephalus o* \times *Leptotilos javanicus o*). Note their completely "hairy" necks compared with Fig. 1.

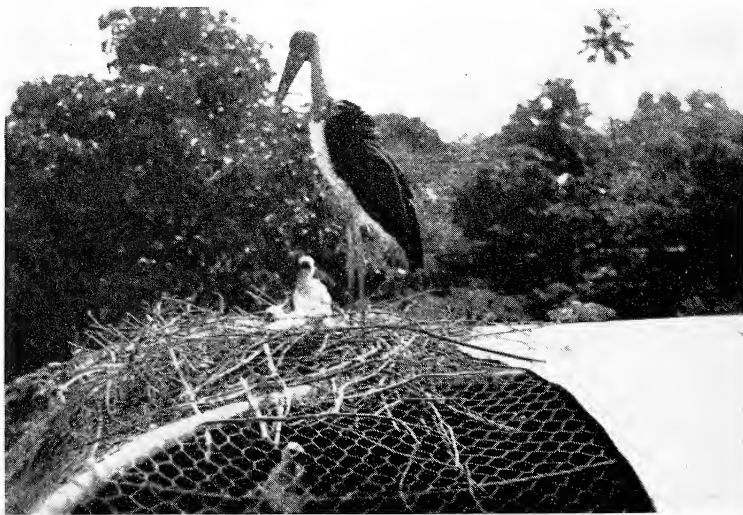


FIG. 3.—FEMALE LESSER ADJUTANT at nest with her Hybrid Babies.

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INTER-GENERIC HYBRID STORKS HATCHED AT SEMI-LIBERTY

By W. C. OSMAN HILL, M.D., CH.B., F.Z.S., etc.

Weinman (1940) recorded the breeding in 1937 and 1938 of some Indian Painted Storks (*Ibis leucocephalus* ; formerly *Pseudotantalus leucocephalus*) in a state of semi-domestication in the small collection of local animals at that time kept on exhibition at the Colombo Museum. The birds were not caged, but after wing-clipping, or in some cases, pinioning by myself, they were allowed to wander about the Museum grounds at will. As far as I am aware, this was the first record of the breeding of birds of this family under such conditions.

In 1942 the Museum collection was unfortunately broken up and much of its contents, including all the waterfowl that I was able to capture, transferred to the Zoological Gardens at Dehiwela, where the Herons, Storks, etc., were added to the others already on exhibition there in a similar state of semi-liberty.

But I am anticipating somewhat. A year or more before the disbanding of the Museum collection, Mr. G. M. Henry, of that institution, had drawn my attention to the periodic appearance among the Museum Storks of a strange bird resembling an Adjutant, but not conforming with the description of the Lesser Adjutant (*Leptoptilos javanicus*)—the only known local species of the genus. He inquired if we had any exotic species at Dehiwela other than the Greater Adjutant (*L. dubius*) which, again, did not fit the description of the newcomer. I informed him that we had not ; whereupon he remarked that it was either a completely new species ; or, as he suspected, a hybrid between the Lesser and Greater Adjutants. I was not certain at that time whether the Dehiwela birds had been nesting or not, and even if they had, I was doubtful whether either the original

Dehiwela birds or their offspring could or would take the trouble to leave their ideal environment and travel across the city for a distance of five miles to fraternize with the Museum birds in their admittedly less admirable, though adequate, surroundings. The subsequent story, however, proves that this is actually what had taken place. Meantime, at Mr. Henry's suggestion I photographed the doubtful bird for purposes of record and awaited events.

About the time of the transfer of the Museum Storks to Dehiwela, the Greater Adjutants were confined in a paddock, as they were too quarrelsome with the smaller kinds. Hence they have been ruled out of any participation in the present story.

We now know that four broods of hybrid Storks have been produced at Dehiwela; and careful observations have shown that the eggs were laid by a Lesser Adjutant whose mate proved, of all things, to be a much smaller Indian Painted Stork or Rosy Wood-Ibis (*Ibis leucocephalus*). The nest has, in each instance, been built on top of an aviary containing Vultures, and other raptorial birds, which stands on a high bank overlooking one of the ponds. The nest was composed of loose twigs carried to the spot by both parents not only preparatory to, but also during the process of egg-deposition, as well as after the hatching of the young. Two young were hatched on 4th April, 1940; and three on each of the other three occasions, 31st October, 1940, 16th March, 1941, and 20th February, 1942. No activity has occurred so far this year, probably because the Zoo is now full of hybrids. One brood was completely wiped out when quite young by bad monsoon weather, but all the others were reared by the parents, who take turns both in incubating the eggs and in the after-care of the hatchlings.

Little can be observed of the young in the earliest days after hatching, but they appear to be naked or nearly so. They shortly, however, become clothed with white down more or less all over, including the parts which are naked in the adult Adjutant. At this stage they are comical objects, sitting, when the parents leave the nest, with their necks stretched out, making asthmatic sounds to attract attention. They grow very rapidly and within a few weeks stand up on the nest, which is exposed to the full glare of the sun in the daytime, without any attempt to wander off. Even when they do leave the nest they stay for weeks on top of the Vultures' aviary before taking to their wings and joining the other Storks which have their freedom in the gardens. Once they have found the use of their wings, however, they spend quite a lot of time wheeling about overhead at a great height, often without flapping their wings for long periods. This habit is also indulged in by both parental species.

After losing the original white, downy plumage, the hybrids display a more or less uniform dirty brown clothing which is, in turn, gradually

changed for a habit closely resembling that of the Adjutant, whereas the previous crop of feathers is more in accord with the life-history of the young Painted Stork, which disports a brown habit for a time.

The adult plumage is of a more sombre tint than that of the adult Adjutant. It is a less pure black, or grey, having a brownish element. The white underparts are, however, like that of the Adjutant, including also a white rump, ordinarily concealed when the wings are at rest. The chief differences from the Adjutant lie in the colour of the naked parts of the face and neck, and in the quantity of hairy feathering on these parts.

A brief outline is first necessary of these regions in the Adjutant, since they are inadequately described by Wait (1931). The pure Adjutant has a heavily-built, boat-shaped, dirty, horn-coloured bill, succeeded by a naked face of dull, dirty, purplish-pink. The top of the head has a brownish horn-coloured "pate" of keratinized skin—quite naked; but behind this, on the occiput, is a tuft of blackish, hair-like feathers, tending to be continued as a median linear crest down the back of the neck, whence the alternative name of Hair-crested Stork which has been applied to the species. The skin of the back of the head and of practically the whole neck, the rest of which is almost naked, is a sallow, dirty yellow, except for a patch of purplish-pink on either side near its root, just anterior to the shoulders. The iris of the Adjutant, stated by Wait to be "whitish", is actually a very pale blue. The legs are slate coloured, without any brown tinge mentioned by Wait, whose observations were probably based on dry skins.

In great contrast to this is the state of affairs in the Painted Stork. Here the bill is slenderer, somewhat curved down at the tip, which is rounded instead of pointed, and of a light orange colour. There are some naked parts on the crown, face, and throat, all of a light orange hue, but the extent of the naked area varies individually, probably increasing with age. The neck is wholly feathered, the feathered region commencing abruptly at the back of the head or on the hinder part of the crown. In colour the neck plumage is white, as is also the major part of the body plumage. The primaries, secondaries, and rectrices, however, are black, with a greenish reflection. This is relieved and beautified by the delicate rosy pink of the tertiaries, which are edged with white; the tinging of the scapulars and under tail coverts with similar colour; the black-edging of the lesser wing coverts; and a broader blackening across the breast and on the under surface of the wings.

The hybrid Storks, although, as mentioned already, agreeing almost completely with the Adjutants in their general bodily plumage as well as in their larger size, differ in the following points:—

(a) Tendency to more complete feathering of the neck.

(b) Different colour of the naked parts.

(c) Facial appearance tending towards that of the Painted Stork, especially in the older individuals.

As regards the neck the feathers are dirty, brownish-black, and are of the hair-like character found only in the "crest" of the Adjutant; but here they are much more closely planted and clothe most of the neck. The naked areas on the face are more brightly coloured, though never as bright as in the Painted Stork, being a rusty-pink, darker on the throat and paler round the eyes, where the skin has a greenish-yellow tinge. The irides are greenish-brown.

It would seem, therefore, that in these Storks the black and white plumage characteristic of the Adjutants is dominant to the more completely white plumage of the Painted Stork. The following characters would also seem to behave as dominant Mendelian factors: (i) "feathered neck" (dominant to naked neck); (ii) black, hairy neck feathers (dominant to white normal); (iii) orange neck-skin (dominant to yellow); (iv) dark iris (dominant to blue).

In conclusion importance must be attached to the fact that two individuals of different genera of Storks have chosen to combine in the task of rearing families on several occasions despite the availability of members of their own species in the vicinity.

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* * *

BUT ONCE IN A LIFETIME

By EDWARD BOOSEY

When war broke out the first thing, I suppose, that occurred to most of us was the question of whether or not we should be able to continue to get supplies of food for our birds, when freightage would presumably be needed exclusively for the transport of human foodstuffs.

Obviously one's rarest birds must therefore be maintained even at the cost of commoner stock. Here at Keston, after giving the matter careful consideration, we decided to liberate most of our common African Waxbills and from my own naturally-planted "bachelor" aviary I decided to let out the Pekin Robins, and Orange-headed Ground Thrush, a Common Mynah, and a bird which by the dealers had been optimistically called a Crimson-breasted Thrush. The latter, I may say, had not the slightest vestige of crimson anywhere in its plumage, and was an extremely dull, wild, mud-coloured bird with buffish-brown areas on the breast, so that its instant departure on being liberated was no great loss.

The large flock of Waxbills consisted of Fire Finches, Cordon Bleus, Red-ears, Orange-cheeks, Lavender Finches, Orange-breasts, Avadavats, and Green and Grey Singing Finches, plus a fair sprinkling of Paradise and Pintailed Whydahs, Combassous, Atlas, and Orange Weavers and Saffron Finches.

I am writing this article because I do not suppose ever again shall I liberate such a large number of foreign birds all at the same time and their subsequent behaviour is, therefore, I think, of considerable interest.

The Waxbills, particularly the Red-ears, Orange-cheeks, Orange-breasts, and Fire Finches, all kept together in a flock, and it was interesting to see how much of their time was spent on or close to the ground. Sometimes they would all be found sitting together in a particular blackthorn in the sun, but most of their time was spent in the tall grasses and weeds, such as teasel, etc. As one approached them the whole flock would go off, looking rather like a swarm of bees and flying not more than 6 feet from the ground, only to settle again at the further side of our 8-acre meadow.

Curiously enough one patch of hawthorn, which was much overgrown with old man's beard, at a particular corner of this field, seemed to have a great attraction for the Waxbills and they could usually be seen flying to and fro from this spot to the aviaries from which they had been liberated. Incidentally we continued to feed them in hoppers in these aviaries, leaving the windows of the shelters open so that they could fly in and out at will, and I may add that by November many of them had been caught up as, to our surprise, there was still a considerable sale for them.

The Lavender Finches made a pretty sight and usually kept together, and the Avadavats were particularly lovely and in addition have the added advantage of possessing a very melodious and oft-repeated little song.

Cordon Bleus I have often kept at liberty before, but was once again struck with the beauty of their buff and sky-blue plumage especially when seen against a background of living greenery.

Fire Finches, which are the best and most certain stayers of all the small Waxbills, were particularly tame and fearless, and displayed a partiality for domestic buildings which I believe they are said to do in their native Africa, so much so indeed that a large flock of them could usually be found in a seed shed, many of them sitting sedately in rows on the large central perches of a stack of parrot cages which were stored there ! This shed was left open all night as a retreat for any of the birds which cared to use it, but it was the Fire Finches to which it seemed to appeal as a roosting place.

One of the things which most surprised me was the fact that hardly any of the Orange-breasted Waxbills seemed to stray, whereas I have several times tried Waxbills at liberty before, and had always found that the Orange-breasts went off at once. On these occasions, however, I used to liberate not more than three or four pairs of each kind, and it would seem that under such circumstances Orange-breasts stray at once, but remain if liberated in a large flock.

It is difficult to say exactly how many of the Orange Weavers remained, as most of them were out of colour, and therefore at a distance very difficult to distinguish from Sparrows. A good many nests, however, were constructed in the hedges, though these, judging from their size, were mostly the work of the Atlas Weavers.

The majority of the Paradise Whydahs were also out of colour, but some of the Pintailed in colour proved very spectacular with their long black tail feathers streaming out behind them as they flew. These, too, indulged in curious and interesting nuptial flights. Every now and then several would mount lark-like high in the air, descending in a rapid spiral which admirably displayed the decorative qualities of their long tails.

The Combassous at liberty were chiefly notable for the terrific speed of their flight, which was usually accompanied by their harsh, chattering cry. More than all the other small birds they seemed to take a joy in flying for flying's sake, and would often dash off at a tremendous speed from one place to another, apparently with no definite object in view.

The bright orange and yellow of Saffron Finches made a particularly good show, and if and when times ever become normal again I would strongly recommend them as liberty birds, since in addition to their showy qualities they are excellent stayers.

There were some sweet songsters among the Grey Singing Finches. Of all small foreign seed-eating song birds this, I think, is my favourite, and the volume of the bird's song compared with its size is truly astonishing. I only wish they could be naturalized and added to the number of our native birds.

Now as to the birds released from my planted aviary.

The "Crimson-breasted Thrush", as I have said, made off at once, and although I saw the Orange-headed Ground Thrush on the lawn two or three days after it was let out, that was the one glimpse I got of it, so, presumably, it too must have quickly strayed.

The Pekin Robins remained for some considerable time, but proved to be extremely skulking in their habits, and I was only aware that they were still about from hearing their song, which usually issued from the depths of the thickest bushes.

By far the best stayer proved to be the Common Mynah, and this was particularly surprising, as it had been desperately wild in an aviary and gave the impression of a bird that would dash off the moment it got the chance of doing so. Actually, however, it took up its abode in a particular plum tree in the garden, being always much in evidence, and regularly appearing when I fed the birds in my planted aviary, in order to be given its daily quota of mealworms. When it was first liberated it fed largely on plums, chiefly I think those rather over-ripe ones which had been already started on by wasps. It was amusing to watch it walking sedately up and down a path bordered by Colchis Gem Dahlias, methodically tapping each bloom with its beak and eating any earwigs which happened to drop out ! Altogether it was a nice bird at liberty, though it could not be called showy and its flight, even under such conditions, was somewhat laboured and heavy.

In passing I might mention that I am, unfortunately for myself, in the position to advise those who contemplate liberating a Hunting Cissa *not* to do so. The hen of a pair in my possession unhappily escaped when they were being moved into a new aviary, and though she was seen the next day subsequently completely disappeared and was never seen again.

In conclusion I might mention a young hen Rosella which escaped while being removed from its parents at the beginning of August. As she lost her heart to a cock Brown's \times Rosella hybrid, of which I had three, I decided to liberate him as a companion for her. The hybrid made a particularly brilliant and fascinating spectacle as he winged his way about the garden, skimming with incredible speed and accuracy through gaps between the branches of trees and sometimes diving suddenly down into a hedge, as Broadtails will. One moment I shall not forget was when we were having tea on the lawn by a lily pool and both came and perched on the shallow basin of the fountain, in which they proceeded to have a bath.

Unfortunately the hybrid disappeared after a week or two, and as he was very devoted to his Rosella wife, who remained, I can only suppose that he was either captured or shot, as he would have been most unlikely to stray away without her.

* * *

THE SENEGAL PARROT

By Prebendary SWEETNAM

Though I have looked up every reference in Dr. Hopkinson's invaluable index, and the indices of each separate volume not covered by it, I have failed to find the coloured plate of *Poeocephalus senegalus* which I was convinced had appeared in some volume of the AVICULTURAL MAGAZINE.

The only such plate at my disposal is not mentioned in the Doctor's "List of coloured plates of Parrots" in Vol. VIII (Third Series) of the Magazine. This plate appears in Vol. II of *Greene's Parrots in Captivity*, and, though fairly accurate as regards colour, it misses the distinctive pose of this little Parrot which, in size, is perhaps slightly larger than a Missel-Thrush.

In colour the species is a beautiful blending of slate and dark grey (head, cheeks, and upper part of the throat), grass-green (all the upper parts and upper breast except the tops of the tail and primaries, which are dark brown), orange (lower breast), and bright yellow (tail coverts). The beak is horn grey, the irides sulphur yellow, and the cere dark brown.

Though he is not the only specimen of this delightful species I have possessed, I am not thinking in terms of species but of one individual of it who answers to the name of "Joey" and whose limited vocabulary includes the answer to his own question, "Who are you?" . . . "Mr. Joey."

Senegals are no talkers, but Joey, at any rate, is so surprisingly apt in the use of his limited phrases as to suggest an association of ideas in the avian mind to an extent I have never observed in any other bird.

Two instances of this association of ideas seem worth recording. Both are connected with the war-time necessity of economizing labour in a large rectory with no outside domestic staff. This has meant turning the kitchen, where Joey normally lives, into a breakfast room. Silence (avian!) reigns while porridge (which he does not fancy) is being consumed, but no sooner has the toast rack come into play than "Mr. Joey" utters a shrill and piercing call, never uttered at any other time, and persisted in until he has been provided with a crust smeared with either marmalade, jam, or better still, the honey from the apiary which, I am almost ashamed to say, now occupies

the site of my outside aviary in those halcyon days when not only rare birds but the wherewithal to keep them in well-being were to be had almost for the asking.

Even the most frugal breakfast has to be cooked by someone, be that someone male or female, clerical or lay. To summon to the repast the other member of the "staff" of two, I use a peculiar whistle, but, as often as not, and particularly if my culinary activities have been at all dilatory, I am forestalled by Joey with such an exact imitation of the call that my wife often arrives prematurely from her activities in the upper regions. The point of interest here is that, though the kitchen is sometimes used for other meals neither I nor Joey use the special summons at any other than breakfast-time. Since I first obtained him, about six years ago, Joey has considerably altered his habits. Then, as now, he had full liberty and was constantly on the wing until the annoyance of trying to induce him to return to his cage at nightfall from some high perch led me to clip the primaries of one wing. They have grown long since, but, except when scared, he now never attempts to fly, and contents himself with climbing about on the shrubs outside the kitchen window. Incidentally, the species, though strong fliers once on the wing, are most clumsy in alighting on the ground, probably because being naturally arboreal they seldom have occasion to do so.

In his early youth (I think he was immature when I got him) he would let me do what I liked with him, and I often carried him about in my pocket or on my shoulder. Now, and without any apparent reason for the change of attitude, I can only touch him at the dire risk of a gashed finger—though he will allow my wife to take what liberties she will with him, comes to her call when he entirely ignores mine, and with uplifted wings utters a sort of croon when she speaks to him.

I believe this complete change of attitude in the adult from that of the immature bird illustrates that sex-consciousness observable, I am told, in other species of the Parrot family, some of which exhibit it even in their attitude to quite young children.

In looking up the references to the species in early volumes of the Magazine I came across some correspondence on the ideal pet bird, and more than one correspondent gave the palm to *Poeocephalus senegalus*.

However that may be, in general there is one direction in which the species (at any rate as represented by this particular specimen) can make out a good case for being the ideal war-time bird since he presents none of those feeding problems which weigh so heavily on the minds of most aviarists who have had to watch their birds gradually dwindling away for lack of proper food. To all intents and purposes Joey is omniverous, and except for a few days mopiness during his

winter moult, or if subjected for any length of time to a low temperature, he is always in excellent health and spirits, in spite of a diet which flouts the advice of all authorities on the feeding of Parrots. In his wanderings about the kitchen sink he must, at one time or another, have sampled almost every form of food used for human consumption—and some which isn't.

Meat is supposed to be "verboden", but only permanent caging could prevent such an incurably inquisitive creature, who likes to have his beak in every pie and every dish, from occasionally sampling even that.

His staple diet is a home-grown mixture of oats, rye, and sunflower seed, with plenty of fruit, except for the six weeks or so in the year when it is not easily obtainable.

When "this tyranny is overpast" and we can once again occupy our spare time—more or less—as we choose, I am minded (if for no more utilitarian reason than appreciation of their generous and welcome contribution to the war-time larder) to leave the bees in possession of the sometime aviary and concentrate on birds which, like Joey, require neither cage nor aviary to retain their companionship.

* * *

WILD BIRDS AT THE NEW YORK ZOOLOGICAL PARK

By JEAN DELACOUR

The New York Zoo, in the Bronx Park, has long been known for its particularly large and fine series of exotic birds. Mr. Lee Crandall, now the General Curator, who for nearly thirty years has had charge of the bird collection, is a keen and experienced aviculturist. He has succeeded in building and maintaining it up to a high standard from the beginning. Even to-day, when since more than a year all importations have ceased, we still can show a large number of rare species. Our collection of perching birds is undoubtedly the best in existence at present. Our Head Keeper of birds, Mr. George Scott, who came from England, is to be congratulated for the good condition of our birds; among them, old specimens are now numerous, but they do not show any unfortunate signs of age.

Besides our captive birds, however, we are graced by innumerable wild ones as well. The Zoo is large, extending over some 300 acres. Adjoining it is the equally large Botanic Garden. The grounds, for the greater part, are heavily wooded, with fine old trees, rocks, streams, and lakes. There is also plenty of high grass and bushes; this explains the abundance of wild life.

The picture varies according to seasons, and, naturally, spring and autumn are particularly interesting. One of the great features of the Park is the large number of native waterfowl found everywhere. There are over a hundred full-winged Canada Geese and four times as many Mallards, all the year round and breeding regularly. Their numbers increase in the autumn through the arrival of winter visitors. Some Black Ducks remain during the summer, but the huge flocks which winter with us go north in the spring. There are a few wild breeding pairs of Carolina, or Wood Ducks, but most of them migrate south in the cold weather.

During the autumn, winter, and early spring several other species of Ducks appear for shorter or longer periods, principally Wigeon, Pintails, Goosanders, and Hooded Mergansers, Golden-eyes, Lesser Scaup, etc., the most numerous being the Greater Scaup, which stay late in the spring. They usually become fairly tame.

Unfortunately Waterfowl breeding in the park have many enemies. Horrible wild boys, unfortunately too numerous in this part of New York City, destroy many nests, in spite of the keepers' vigilance. Then we have, in North America, a terrible pest unknown to Europe, the snapping turtle. Some of them, in our Bronx waters, reach 50 lb, or even more in weight, being strong enough to kill any bird. In fact, last winter we lost two Black Swans whose heads had been almost cut off by those brutes, and this very summer a large and savage Whooper was killed in the same way. We destroy as many turtles as possible, but it is extremely difficult to exterminate them as they hide in the mud. Another check on the numbers of waterfowl is the occurrence almost every summer during the hot weather of epidemics of botulism on our larger and shallower lakes. The birds become paralysed and would die if not caught up and immediately treated by cold, pure water. In spite of the above three scourges we really have more wild Geese and Ducks than we want. The flights of the Canada Geese, from one pond to another, constitute one of the great natural attractions of the Park.

Three acclimatized European birds abound, as in all other eastern American towns: English Sparrows, Starlings, and Rock Pigeons, and they often prove a nuisance. The Pigeons, offspring of escapes from domesticity generations ago, are all colours, like those of London; but to my amazement they habitually perch and roost on trees here. They have changed to that extent their normal habits, which is a curious and unusual fact indeed. Perhaps the absence of Wood Pigeons in America is the cause of it—in London, in Paris, and elsewhere, where they abound, they may keep the common Pigeons off the trees if they begin to show an inclination to acquire this new habit.

To return to water birds, one of our most interesting inhabitants is the Night Heron. There are always a dozen or two of these fine

birds, quite tame, around the pens of our captive Herons and Storks, waiting to steal a part of their meals. They nest miles away from the Zoo, but there are always some with us, even during the winter:

At migration time many small waders visit us, mostly Yellow-shanks and various Sandpipers. They never stop more than a few days.

Herring Gulls are always seen, numerous in the winter and till late in the spring, when they prove destructive to ducklings. A few remain with us during the summer. Only one Hawk nests around the Park, the pretty little American Kestrel. But Sharp-shinned and Cooper's Hawks, a smaller and larger edition of the European Sparrow Hawk, live in the vicinity and pay occasional visits, while many others are winter passage migrants; most of them belong to three species of American Buzzards known as Red-tailed, Broad-winged, and Red-shouldered Hawks. There are always a few pairs of Belted Kingfishers about the lakes.

The only species of Pigeon native to N.E. America, since the Passenger Pigeon has been exterminated, is the Mourning Dove. It is not common in the Park, but a pair is seen now and then and they nest occasionally.

The lovely Ruby-throat Humming-bird, abundant around New York, is very seldom seen in the Park. But every year some are captured in the city during their migration and brought to us. They do well in our planted aviaries.

The Downy Woodpecker and the Flicker, which respectively take the place of the European Lesser Pied and Green Woodpeckers, are common residents. The Hairy, replacing the European Greater Pied Woodpecker, is a winter visitor.

A great number of birds arrive in the spring, nest with us, and migrate south in the autumn. Probably the most conspicuous are the large Grackles, almost as brilliant as the African Glossy Starlings. They are very common and fearless. We also have many Cowbirds, smaller and finch-like, parasitic on almost every species of small birds. In the late summer thousands visit us for a few weeks on their trip to the south. Two Troupials, the Redwing, and the Baltimore Oriole nest in small numbers.

The American Robin is a nice Thrush as familiar as its cousin the Blackbird is in England. Unfortunately its song is not nearly as good. They keep to lawns and gardens. The smaller and prettier Wood Thrush lives more under cover; its song is charming; we have many of them. The small and dainty Hermit, Olive-backed, Grey-checked, and Veery Thrushes visit us in the spring, the latter nesting in the neighbourhood. We never see the lovely Bluebirds, although they are common enough in the more open parts of the district. American Willow Tits, here called Chickadees, White-breasted Nuthatches, and House-Wrens are fairly common residents, and a

few allied species join them in winter, when we also see some Brown Tree-creepers.

Of the Mocking-bird family we have some pairs of Brown Thrashers, excellent songsters, and lots of the delightful Catbirds, fearless and amusing. They come to nest during the warm season, as do some Tyrant-flycatchers, the large Crested, and the small Wood-Pewee and Phoebe.

Barn-Swallows, very similar to the European, are the only common ones in New York.

The numerous species of American Warblers, completely different from the Old World Warblers, much more highly coloured, and in fact not at all closely related to them, are probably the most typical and attractive group of North American birds. In the spring they simply swarm in our woods. Most species go north to nest, but a few stay for the summer, namely, the charming little "Redstart", the Yellow and the Maryland Yellow-throat.

Another charming summer resident is the Red-eyed Vireo. For a few days in the spring we see some gorgeous N. A. Scarlet Tanagers, very similar to the well-known Brazilian, but with a smaller and black beak; it exchanges its red colour for a yellowish green during the winter, when it goes south. A very conspicuous, familiar, and pretty bird, very abundant all the year round in the Park, although there are various migrating moves among the population, is the Blue Jay. It is smaller, tamer, and less destructive than its distant European cousin. It just misses being a really beautiful bird in having too much grey mixed on the face and under parts; were these pure white it would be really one of the finest species of the group.

Finches and other thick-billed birds are numerous in N. America, and some are very bright, such as the Rose-breasted Grosbeak, the Purple Finch, the Towhee, and the Indigo Bunting, which visit the Park at migration time. The handsome little American Goldfinch, in its rich yellow plumage, also comes, and a few stay to breed. Unfortunately the beautiful Red Cardinal, common in gardens across the Hudson, just south of New York, hardly ever crosses the river, which now is its northern boundary; but the species is gradually extending north so that it may settle in our Park soon. It would be a wonderful addition to the bird population.

Of the innumerable species of Buntings known in America as "Sparrow", only the Song and Chipping Sparrows are resident. Several other species of these inconspicuous little brown birds, which, however, have great charm and often nice voices, pass on migration, while others spend the winter with us, such as the Slaty Junco.

British readers will recognize among the wild birds which I have mentioned many handsome species—highly sought after as aviary birds in Europe. The truth is that the North American avifauna is

richer and brighter than the European. It benefits from the fact that there are no wide sea and desert cuts between the temperate and tropical zones in the Western Hemisphere, as the Mediterranean and the Sahara between Europe and Africa.

* * *

THE BUILDING OF AN AVIARY

By H. C. MARTIN

Since I was at school, besides being a lover of birds—though I have actually kept comparatively few species and of these not many individuals—there has always been in my make-up a fondness for carpentry and kindred handicrafts, a combination which in fact will, I believe, often be found in very many of us who find great pleasure in the study, as well as the entertainment and society, of living creatures. For does not the former quality in a great measure give rise to the latter by the very desire and need that one feels to do the best one can to house bird and animal friends as fittingly and worthily as one can and to provide nicely for their wants, since willing captives though they be, or become in most cases, captives they are and thus must rely solely upon us for their happiness and well-being.

And another thing ! If one have the bump of construction one is largely and beautifully independent in building matters of the paid workman, who does not always carry out as one would have them, nor does he greatly trouble his head about, precise details and finish which furthermore may, and would in fact, call for far too much of that costly item “man’s time”, whereas the happy amateur can put in a priceless, in more than one sense, hour or two, just when the fancy takes him, and as his plans and ideas mature.

My present home when I acquired it had one blank wall facing south, about 25 feet long, the ground beside it being rough and concealing some old foundations which made it valueless for gardening, even had I desired so to use it. Well ! I thought, here after many vicissitudes and an unsettled life both in England and abroad, here at last is my chance to realize a minor ambition and build myself a small aviary after my own ideas, beginning with the conviction that there is nothing like a lean-to, against a wall, owing to the warmth and protection this affords, and to the fact that it provides one supporting side already made, greatly helping frame and roof construction. But also I must have a workshop—and I fancied a little greenhouse as well : the former was an absolute *sine qua non*, but wiser should I have been to forego the latter entirely and use all the space for aviary, since, owing to the southern aspect—Hobson’s choice—and my neighbour’s high board fence intervening, both proved to be far too hot on bright summer days, and the greenhouse

space would have provided a much wider flight as well as a much roomier inner compartment.

To my mind really nice aviaries can be divided broadly, and constructed in, two distinct classes : (a) the spacious rustic, or "natural" type, the flight of which can be furnished with tree trunks, growing shrubs, and even grass, gravel and sometimes rock-work, and constant water, and (b) the purely artificial or "formal", with utility fittings, in which, none the less, birds will do exceedingly well, be most happy and often breed freely, notwithstanding "unnatural" environment. There are also, of course, the "hen-run" type, lightly and inelegantly put together, and the pre-fabricated "standard pattern" type, designed, I fear, too often by makers who of aviculture have no deep understanding ; for neither of these have I much sympathy.

Type (a) I have been privileged to see in some fine collections and zoos, but for the great majority of us it is, as I idealize it, for reasons of space and situation, upkeep, and attention, apart from first cost, practically out of the question. Type (b) then is the one for me, and I will try to show broadly how I brought it into being, firstly, of course, putting the approximate design and dimensions upon paper, an essential preliminary with any construction to the achievement of good results.

Let me begin with the base or foundation : this was first cleared, to some six inches or so, of loose soil which was replaced by the same depth of builder's rubble broken fairly small and beaten down level, so providing a soakaway for rain water as well as a defence against burrowing vermin, this layer being topped eventually with smooth cement for the shelter compartment and easily renewable sand for the flight. It has always been painful, exasperating almost, to me to read over and over again in many accounts of aviculturists of the doings of their birds, about the heart-breaking destruction, by mice, rats, or a weasel, of promising broods or clutches of eggs. But I do not sympathize with them greatly, for have they not nearly always themselves to blame, for not providing, first and foremost, non-penetrable foundations, topped by a foot, or less, of neat brick walling—one brick thick is enough—built into which at the required intervals come the main supports of the framework rising above it. Use the best small mesh wiring, keep it painted, black to assist vision, and to prevent corrosion, let all doors and openings fit well, and no mouse will ever trouble you.

Cement work, once simple first principles are learnt, is really very interesting and quite easy, though a little rough and not to be undertaken except one be duly clad in dungarees or one's very worst suit. There is something fascinating—and satisfying—about creating, for example, from just old broken bricks a neat little surround wall which will be a solid and enduring, and even artistic, basis for the

structure above it, as well as a shield from vermin and in part from the elements. Various little refinements can be introduced too, such as a neat cement capping to that wall, a smooth inner finish, which will always be clean, and even effects such as external "pointing" coloured by the addition to the mortar of a little red ochre. A curved corner too (if a curve can be a corner, though we do talk about "going round the corner") to match a curving path looks well, and may be readily attained, as in my case, by the use of some simple pieces of flexible ply-board "shuttering" as moulds to build against and remove when all is duly set. One can even effect the combination of that curve with the upward slope of the roof, where the two must meet, using as a reinforcement any piece of bendable strip-iron and plywood again for moulds.

In writing all this I speak, of course, of the happy days gone by—*pro tem.* only, let us hope—when materials were readily obtainable at moderate prices, nice clean-planed quartering in various sizes for posts and framing, feather-edge board for the outer side of the shelter, asbestos sheet or fibre board for inner lining of divisions and—a material which I consider very nice indeed for partial aviary work—"Georgian" wired glass, such as is used for lift casings, office partitions, and so on, and which could be had in large sheets, constituting a strong, ready-made, smooth and cleanly, non-conducting, translucent and indestructible (except by great violence) walling, of very pleasing appearance for ends and divisions, although ordinary thick, ribbed, or faceted glass is almost as good, with the one great drawback that, should it be broken, disastrous escapes might result. "Georgian" glass is, or rather was, a little costly, something under 1s. the square foot, but its advantages justify this.

For my roof, over aviary and workshop, each of which has a skylight, I used a brand of patent red, rough-surfaced, bituminous tiling, unbreakable (even by shrapnel, so-called) and pleasing to the eye, matching well with the usual red tiles of the house, and vastly nicer than any corrugated or felted roof. This tiling is laid upon tongued and grooved planking with an intervening layer of tar sheeting: in it again we have a somewhat expensive material, but its use was well worth while.

The aviary is about 7 feet high in front and 9 feet at the back: for the "principals" I used 3 inch by 3 inch (nom.) quartering, and 3 inch by 1½ inch for the intermediate posts and roof supports, which subdivide the wiring into separate frames about 2 feet wide. Each of these can be easily detached by removing a few equally spaced screws, should this at any time be necessary for overhaul, repairs, or painting, though perhaps my real reason for this method of construction is a dislike in cases like this for the use of nails, and also for wiring permanently fastened to main framework by staples. Removable frames,

and screws used judiciously and preferably of brass, make a nicer and more manageable job, though it will be argued that this means elaboration in work and materials ; but it gives a neat finish and nicely stretched wire-mesh. One of the frames, I may add, is hung on hinges, so constituting an emergency door to the outer flight, which sometimes proves quite handy.

I spoke above of painting, but of paint proper I used hardly any, except for the framing of the inner shelter. I prefer to avoid employing it except on surfaces which are better so covered, disguised, one might perhaps say. It is messy stuff and on exposed parts it does not stand the weather and needs renewal every two or three years, with considerable labour. I much prefer for aviary work preservative liquids which soak into, rather than cover, neat woodwork, and which in my opinion give a very pleasing effect. My main posts and supports were simply treated with ordinary thin creosote which gives a warm dark brown, and the frames carrying the wiring were coloured a dark blue with one of the several protective colourings on the market ("Solignum," to be precise), giving quite a nice artistic contrast and a departure from the green or buff oil paint so commonly used on light outdoor structures. These fluids, too, are very easy to apply and, by reason of their spreading and penetrative quality, economical in use.

The roof of the flight was covered, at the back only, with about 2 ft. 9 in. of the patent tiling, but later it was found desirable to add a further width of some 1 ft. 9 in. of common glass as additional protection from the wet. The wall at the back, in both flight and shelter, and the asbestos board of the inner partition were treated with light stone colour water paint, likewise a pleasant and effective material particularly on rough surfaces. The division is provided with a self-closing panel which is useful for shutting the birds off on either side : it acts by counterpoises, like an old-fashioned sash-window, but is rather apt to go wrong, and another time I should simplify matters, using one cord only, or a rod controlling it from outside.

With doubts as to the space available, I unfortunately made the inner shelter too narrow, fearing my workshop would be too small and, to partly remedy this, later on encroached upon the inner corner of the latter, to facilitate the feeding arrangements. Although some unavoidable seedhusk and feathers are a little troublesome amongst tools and fitments, this expedient of annexing an inner corner has not proved a bad one, as all is under shelter and, by means of an extra wired door and a hinged flap giving access to the raised floor, I can easily attend to the daily rationing, while keeping my food stocks handy in glass jars on an adjoining shelf. The birds seem to like the scheme too, and there are always keen-eyed customers waiting in the perch "tree" above, on the lookout for such, now rare, luxuries as a pinch

of canary-seed or a mealworm, when I make my morning or evening call.

All external doors are provided with efficient closing springs : gravitation does not act promptly enough, in the case of falling doors or a weight contrivance, as I know to my cost, through the loss on one occasion of several valuable birds through a small drop-door—which belied its name.

I think it is better not to put in plants of any size too near to an aviary of this type ; they are apt to get out of hand, take away light, and cause litter. Not realizing its growing powers, I planted the well-known "Mermaid" single yellow rose beside mine, at the house corner, providing it with a trellis, but it proved much too much of a good thing and has to be cut severely back. A small bed of geraniums or some such plant is ornamental and all-sufficient.

It is curious how fond many birds are of a ledge, especially high up, where they can tuck themselves away for a siesta or to pass the night, and such cosy nooks are likely to result in ordinary construction—unless one purposely fills them in—for example, where rafters meet wall-plates ; but it is better to avoid them owing to the difficulty of keeping such positions clean. Suitable perch arrangements will provide the birds with a choice of roosting places ; the way I arrange them is this : with a central piece of wood of square section, bored through on both faces at selected intervals with a half-inch bit, I build up with beech "dowel" rods—which used to be obtainable at any hardware store—what one might call, for want of a better word, a kind of "tree" with arms, branches rather, of varying length, and parallel. This I suspend from a hook, or hooks, in the roof, and fasten, unless it be heavy enough to hang with very little movement, to a light detachable cross-bar below, so that it can be taken down in a moment and scrubbed, the ideal instrument for which was a copper-cloth saucepan-scraper, formerly obtainable at any chain store, but now only a pre-war memory. The arms, I should add, are of such a length as to leave a space of not less than six inches from the walls, so that all dirt may fall into the sand or sawdust on the cement floor. Similarly the outer flight is furnished with a kind of inclined rack of parallel rods suspended from the roof by four wires, making this, too, immediately removable for cleaning, while a few other transverse perches are provided with a pin at one end and drop into a slot at the other, so that they are firmly held but can be lifted out immediately.

In the floor of the outer flight I let in a piece of narrow drain-pipe to make a socket for any tree-branch or a couple of pea-sticks which can be changed now and again, and seem to afford the birds much amusement. The only other inside utility fittings are a couple of little moveable shelves for food-pans and an assortment of nesting-

ROOFLIGHT OVER
CENTRE COMPARTMENT

GEORGIAN
WIRED
GLASS

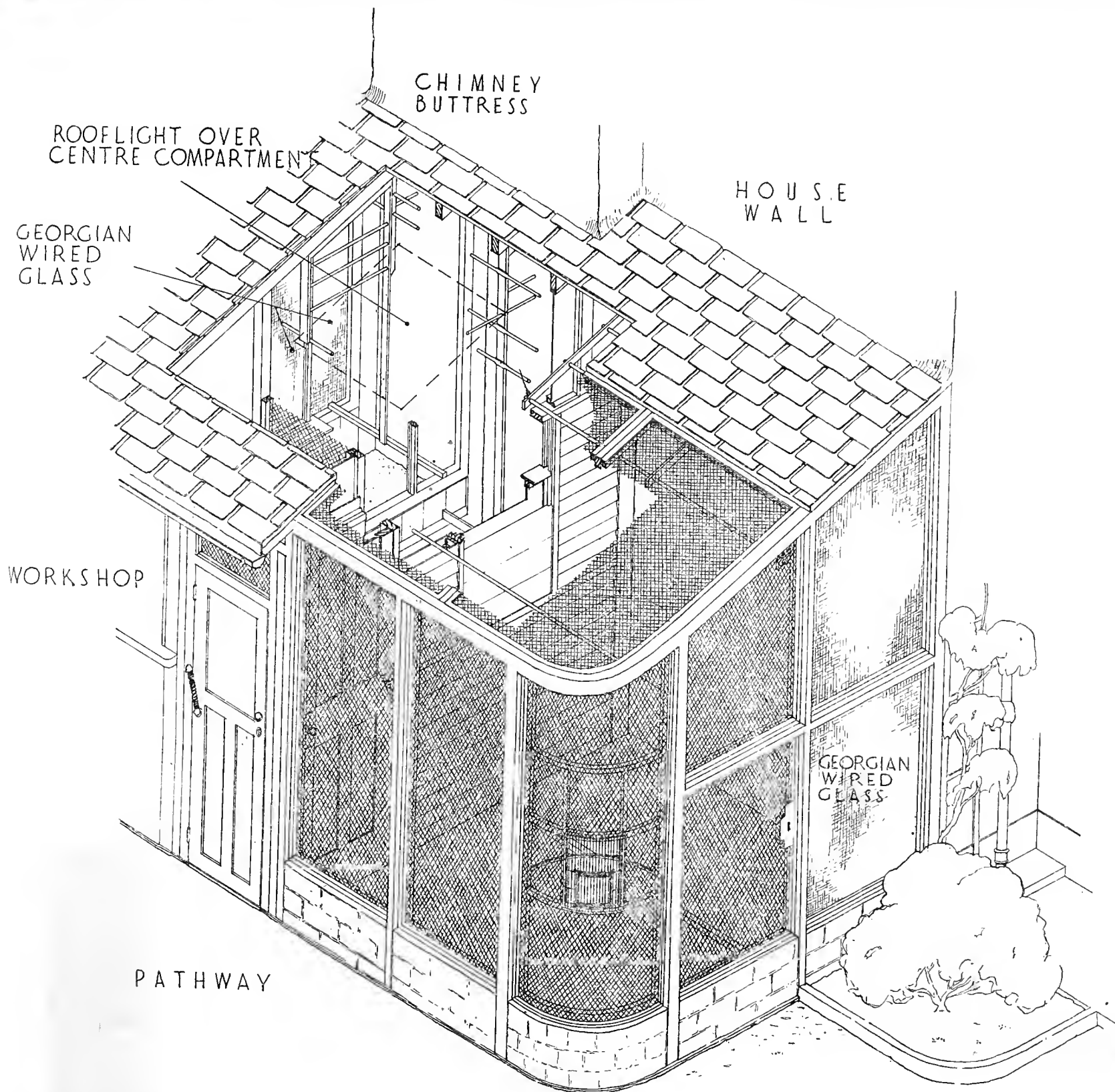
WORKSHOP

GEORGIAN
WIRED
GLASS

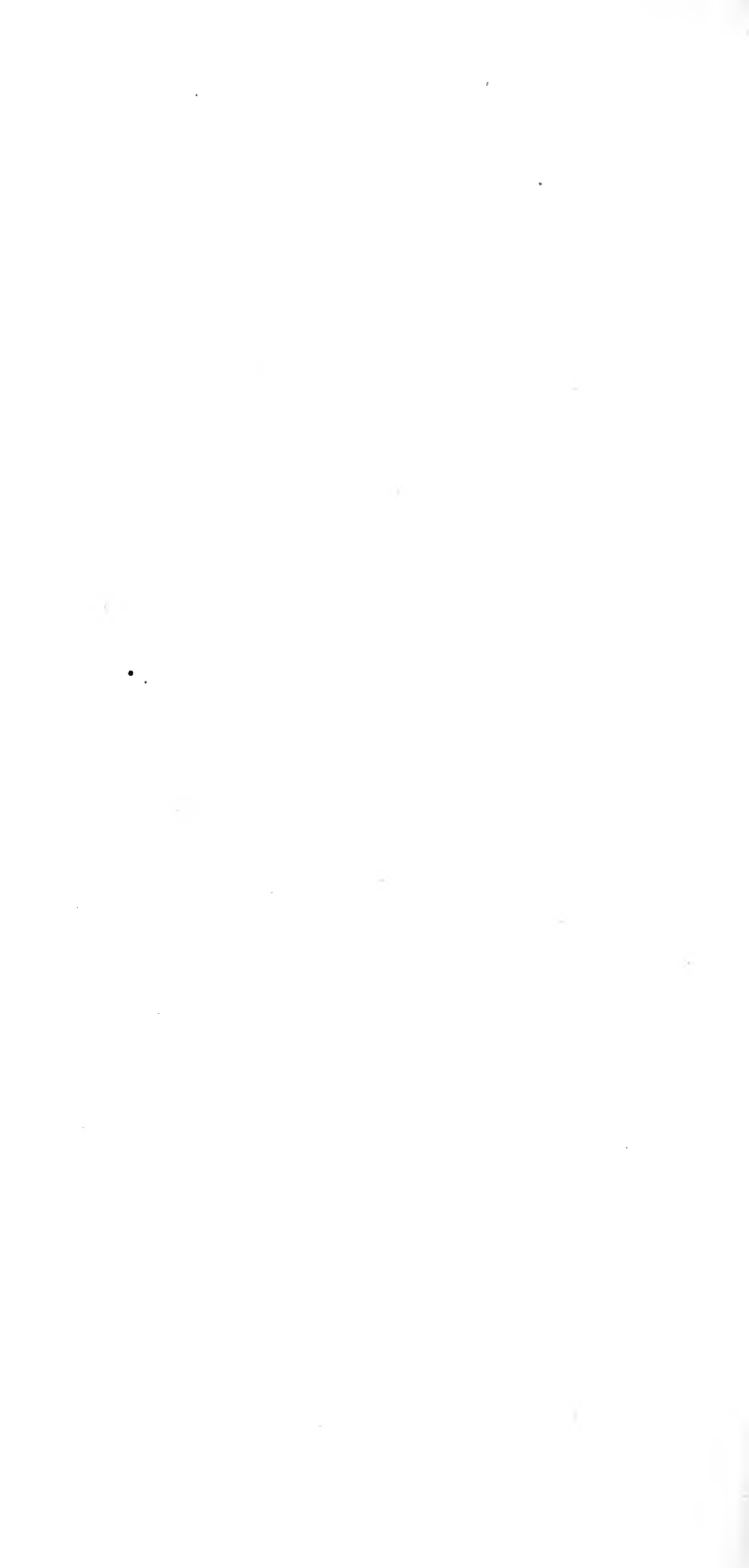
PATHWAY

MR. Interior.

[To face p. 158.]



MR. H. C. MARTIN'S AVIARY. Isometric sketch. Portion cut away to show interior.



places contrived to different patterns from small boxes or from strawberry punnets partly wired over and fastened to a wooden backing, so that they can be fixed up firmly, and creosoted by way of camouflage : the birds take to them readily, and they cost nothing but a little adapting to a new purpose.

To digress a moment from aviary fitting here is a tip, perhaps not new, which I have found useful for perches in cages, namely to fit them between, and not on, the bars by the usual nick or slot. Make your perches from slips of wood about three-quarter of an inch wide by half an inch thick, allowing in the length about three-quarters of an inch at each end, or at one end in the case of a cage with a back. A little rebate is then cut off this protruding end, reducing it to just the width between the wires, with the corners slightly rounded off so that it will just turn stiffly. Then with a small plane the perch can easily be thinned down to roundness at the middle, thus tapering to a slight flat at each end. This makes a perch which, while holding firm, will not jam on the wires and can be removed from outside with a mere twist of the fingers. The protruding ends are not in the way, and the birds can please themselves as to whether they perch on the circular middle or towards the flatter ends, as to which was better there used to be quite a controversy among canary breeders years ago.

Looking back at all the foregoing, I fear it does not convey a very precise idea of the result of my building efforts and, had I a suitable photograph, I would have liked to ask our Editor to reproduce it, by way of fuller explanation : but there are difficulties nowadays even in getting a snapshot taken, and I am a poor photographer, besides which the site does not lend itself to a clear picture. At all events, I believe I have succeeded in producing a practical, not unsightly, and durable bird dwelling, on somewhat solid and unusual lines—it is interesting in such things to aim at something different, but of course not eccentric—by the employment of a rather large proportion of glazing and the utilization of sundry odd materials. In it has lived for the past four years or more, without casualty, through some severe winters, and in spite of disturbing air raids and the scarcity of suitable foods, a little band of old stagers, my favourite White-capped Tanager, the Black-crested Finch, and a few more old South American and other friends, whose perfect condition is quite a testimonial to its adequacy.

Without a labour bill, of course, the cost was very moderate, while the work provided quite a lot of amusement and good exercise. Perfection in such tasks one seldom attains and the aviary is not without several faults, as to which I shall “know better next time”—if next time ever comes. Meanwhile my hope is that here and there I may have provided a useful hint to other aviculturists who, happy owners of a bench and kit of tools, may contemplate the creation, partly at least

by their own handiwork, of a new home for their bird pensioners—when the War is over and “good times come again, all over the world.”

I was about to attempt to make a small line-drawing of the aviary, to attach by way of illustration, in default of a photograph : instead my architect son very kindly offered to make me an “isometric ” sketch of it, which has been reproduced.

* * *

AFTER FOUR YEARS OF IT !

By ARTHUR A. PRESTWICH

Visitors to the London Zoological Gardens cannot fail to be impressed by the number and variety of the *Psittaci* still on view in the Parrot House. The Gardens suffered several times from air-raids during 1940 and 1941—bombs falling on no less than eight occasions. Considerable damage was done, but the Parrot House escaped beyond the loss of glass through blast. Some half-dozen cages, containing Senegal Parrots, etc., were blown from their stands, but fortunately their occupants sustained no injury.

The birds, almost without exception, are in excellent condition, in spite of very restricted supplies of essential seeds, fruits, etc., a state that reflects great credit on the head keeper, W. Alden, and his two assistants, S. Croucher and T. Ellis.

The conditions under which birds are exhibited generally at the Zoo preclude anything very startling in the way of breeding successes. The policy of the authorities is, of course, to exhibit the largest possible number of representative species in the most attractive manner, and breeding on anything like an extensive scale cannot be attempted. Therefore, it is all the more pleasing that there has been a really outstanding breeding success in the Parrot House this year—no less than the Queen Alexandra Parrakeet. A pair presented to the Society by our President, Mr. A. Ezra, nested in the late spring and reared two young. There are now five of this magnificent species in one of the outside flights.

The oldest inhabitant—by residence—is a Banksian Cockatoo female, in the Gardens since 1908 ; by longevity, a Slender-bill Cockatoo, “ Old Bill,” a mere youngster of 93. The “ daddy ” of all Cockatoos, “ Cocky,” a Sulphur-crested, died some months since at the authentic age of 142 !

There are nearly two hundred birds, excluding Budgerigars, of ninety species, at present on exhibition—truly a remarkable collection.

Space will not allow of more than passing mention of some of the rarer and more interesting birds.

In the flights outside the Parrot House, beside the Queen Alexandras, are a Kea, the recent widower of a pair that had been in the Gardens since 1938, doing very nicely on a diet of carrot, lettuce, and peanuts : the female has just died from enteritis, possibly caused by a gift from a well-meaning visitor. Pairs of Bourke's, Pennant's, King, and single Elegant, Crimson-winged, and Yellow-rumped Parrakeets ; no less than five Timor Crimson-winged (*A. jonquillaceus*) and the beautiful Crimson-winged \times Sula Island King hybrid bred by the Duke of Bedford, which must be at least fifteen years old now ; and lastly a pair of Spix Macaws.

The most difficult birds to feed are, naturally, the *Loriidæ*. Very considerable ingenuity is needed to supply them with liquid food because, of course, it is prohibited to give them anything like honey, condensed milk, etc., that is fit for human consumption, hence recourse has to be made to salvaged foods. They all look very fit on their very substitute diet. Several eat a small amount of canary and sunflower seed ; the latter no doubt being the inspiration of a visitor who had given some a plentiful supply of acorns !

The following species are on view and as some have been in the Gardens for a considerable time the dates of presentation and donors are given.

Swainson's Lorikeet, pairs, 1937 and 1942 ; Scaly-breasted Lorikeet, pair, 1937 ; Musk Lorikeet, 1937, all presented by Mr. A. Ezra. Forsten's Lorikeet, 1929 ; Ornate Lorikeet, 1936 ; Purple-capped Lory, 1929 ; Blue-streaked Lory, 1929 ; Red Lory (*Eos bornea*), 1929, all presented by Mr. A. St. Alban Smith ; Red-collared Lorikeet, female, 1941. Black Lory, 1933. White-rumped Lory, 1939. Golden-backed Hanging Parrot, 1936.

There are fifteen species of Cockatoo, the most noteworthy being a Great Black, five Banksian, a Gang Gang male, two very fine Tritons, a perfect Dwarf Sulphur-crested (*K. parvula*) from Java, a pair of Rose-crested, a Blue-eyed, and several Greater White-crested. The best of the thirteen species of Amazon are a Guilding's, Bodin's, Yellow-cheeked, Orange-winged, Salvin's, and a pair of Green-cheeked. The Macaws number twenty-one of seven species, Hyacinthine (2), Blue and Yellow (7), Red and Blue (3), Red and Yellow (2), Military (1), Illiger's (3), Spix (3).

Among the Asiatic Parrakeets are three Derbyan, a Malabar, and an Indian Ring-necked (*P. manillensis*) lutino variety, both the last-named presented by Mr. Ezra.

The African Parrots are a pair of Sudan Brown (Meyer's), Jardine's, Masai Red-headed (*P. gulielmi massaicus*), and four Yellow-vented—better known as Senegal.

Mention must be made of three Red-sided Eclectus, all males, two Dusky Parrots, a Blue-crowned Parrakeet (*Tanygnathus luconensis*),

a Yellow-thighed Caique, and a White-eared Conure female which has been in the Gardens since 1929.

In flights attached to the Small Bird House are six Bauer's Parrakeets, several of which were bred in the Gardens, and a collection of some hundred Budgerigars of various colours. Inside the house are several Masked \times Fischer's and Fischer's \times Nyasa Lovebird hybrids—the latter bred at the Zoo.

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TWO NOTABLE AUSTRALIAN COLLECTIONS

By Lieut.-Col. ALAN LONDON

While returning from leave in April, 1943, I had the opportunity of inspecting two very fine collections of birds, and I feel that an account of each will be of interest to the readers of the AVICULTURAL MAGAZINE. The first was that of the late O. Gilpin, Esq., of Balwyn, a suburb of Melbourne. This collection was at that time for sale by tender, and I inspected it on behalf of the Adelaide Zoo; I understand that it was subsequently purchased by the Melbourne Zoo. The collection was, as will be seen, a very extensive one, and most of the smaller birds were housed in a magnificent block of eighteen aviaries arranged in quite a novel way. A large rectangular block of land was enclosed on all sides by a brick wall about 10 or 12 feet in height, the resulting enclosure was further subdivided into nine equal rectangles, each of which was again divided diagonally, the result being eighteen enclosures, the floor space of which was in the shape of a right-angled triangle, with a pathway which zigzagged to and fro between the cages. I would estimate the size of each of the nine rectangles at about 40 by 30 feet; part of each enclosure was roofed in and all were enclosed with $\frac{3}{8}$ -in. netting. Now for the occupants of each. Aviary No. 1 contained five Plumed Ground Doves; one common American Dove of a species whose name I forget; a single male Virginian Cardinal, and a Red-crested Cardinal; half a dozen Whydahs of various species, all common; a pair of very attractive yellow Grosbeaks of a species with which I was not familiar; a single Pekin Robin; and an American Quail rather like the common Californian. There was also some dozen or more Weavers, mostly out of colour, and a few Rose Finches. The contents of No. 2 were a fine male Princess Alexandra Parrakeet, a pair of Bourke Grass-Parrakeets, and about a dozen Budgerigars. No. 3 contained three nice Banksian Black Cockatoos, two males and a female; two Red and Yellow Macaws, one a male and the other of undetermined sex; a female Blue and Yellow Macaw and five hybrid Macaws, the progeny of the above-mentioned male and female. There were also four Galahs, seven Crested Bronze-wing Pigeons, and an attractive

blue and black Jay, species unknown to me. In No. 4 were two Amazons, one Levalliant's, and the other Red-fronted ; a fine male Palm Cockatoo ; two Green Catbirds ; three Wonga Pigeons ; a pair of Laughing Jay-Thrushes, and about a dozen common Cockatoos, such as Sulphur-crested, Bare-eyed, and Galahs. No. 5 contained a very lovely pair of Brown's Parrakeets and a score or more Budgerigars. In No. 6 was a single Blood-breasted Pigeon and Star Gouldian Finches and Black-headed Nuns, some twenty in all. The contents of No. 7 were disappointing, a solitary Cockatiel and about fifty Budgerigars. No. 8 was devoted entirely to a flock of forty odd Nyassa Lovebirds. In No. 9 was a showy collection consisting mainly of Parrots. There was yet another of the hybrid Macaws previously referred to ; two male King Parrots, a pair of Pennant's Parrakeets ; two female Red-sided Eclectus Parrots ; two pairs of Barraband's Parrakeets ; one Eastern Rosella ; four Twenty-eight Parrakeets ; three Stanley Rosellas ; three Indian Ring-neck Parrakeets, and nine Californian Quails. There were also three birds which I took to be Troupials, of a very nice golden colour, and a pair of Crested Mynahs of a species that I was unable to identify. Aviary No. 10 contained Finches only, nearly all Gouldians, and a few Pictorellas, about sixty altogether. No. 11 contained a flock of some thirty Black-cheeked Lovebirds and in addition a single Cockatiel ; a male Hooded Parrakeet ; a male Red-rump, and a Blue Bonnet of the yellow-vented race. Aviary No. 12 was devoted entirely to Whydahs and Weavers, about forty birds, mostly out of colour at the time, but I noticed one very nice Pin-tailed. In No. 13 were about seventy Finches, mostly Zebras, but also quite a few Yellow-rumps and a couple of Sporophilæ. No. 14 was given up to a nice flock of about fifty Fischer's Lovebirds. The outstanding occupants of No. 15 were six Malay Rosellas in very fine condition, there were also four White Java Sparrows, and about a dozen Budgerigars. In No. 16 was a fine Senegal Parrot, a few more Budgerigars, and about sixty Zebra Finches. No. 17 contained yet another solitary Cockatiel, about a score of Java Sparrows of mixed colouring, and another fifty or so Budgerigars. No. 18 had a dozen Cockatiels and a further fifty Budgerigars. Passing out of the aviary enclosure one next came to a series of small artificial lakes which were the home of a number of Waterfowl. There was a single White Swan, over a dozen Black Swans, including some cygnets ; one Bar-headed Goose ; about thirty Silver Gulls ; a Mandarin Duck ; a Fulvous Tree-duck ; a pair of Grey Teal ; about thirty Mallards and Black Ducks apparently mixed indiscriminately ; three White Mallards ; a pair of Maned Geese and two pairs of Mountain Ducks. Passing on from the lakes one came to a double enclosure called the swamp. Here there were three fine African Crowned Cranes ; eight Bald Coots, some of the Australian and some of the Indian species ;

a pair of Stone Plovers ; four Magpie Geese ; one Spur-winged Plover ; three Straw-necked and one White Ibis ; six Peafowl, including a white one ; two Nankeen Night Herons and an Australian Crane. In some large paddocks were a pair of Emus as well as a small number of Kangaroos and Wallabies. As will be appreciated from the foregoing the collection was one which must have taken many years to get together. I am given to understand that its sale realized in the vicinity of £A650. The late Mr. Gilpin was, I am told, something of a recluse and very few were privileged to view the collection during his lifetime. The second collection, which I saw on the following day, was that of Mr. E. Hallstrom who resides at Northbridge, a suburb of Sydney. Mr. Hallstrom has for some years been very interested in the Cockatoos and the larger Parrots and as will be seen, has got together a really remarkable collection. Unfortunately he was away from Sydney on the occasion of my visit, but his wife was kind enough to show me around his many and varied aviaries and smaller cages. In describing the collection I think one must give pride of place to the Macaws. There are six or seven pairs of the Red and Yellow species, many of which are the progeny of one very prolific breeding pair. There also are two pairs of the Blue and Yellow species, one of which has several times nested and hatched young, but so far has not succeeded in rearing them to maturity. The Red and Blue and Illiger's Macaws are represented by single specimens only. Turning next to the Cockatoo family, there is a very extensive representation. Of the Blacks there are four pairs of Banksians, one of which hatched, but unfortunately failed to rear a young one last summer ; there is also a single Yellow-tailed and no less than six of the rare White-tailed, all in fine plumage and condition. There are also quite a small flock of the quaint and attractive little Gang-gangs. All the well-known Australian species such as the Sulphur-crested, Leadbeater's, Bare-eyed, and Galah are present in varying numbers, and there are also pairs of both varieties of the Slender-billed Cockatoo. Two of the Cockatoos from the islands to the north of Australia are represented in a pair of the rather rare Ducorps' and a truly magnificent pair of the very large Salmon-crested species. Lastly there is the ubiquitous Cockatiel. Most of the larger Australian Parrakeets are included in the collection as well as a few of the smaller ones. Thus, there were one or more pairs of Barraband's, Rock Peppers, Queen Alexandras, Kings, and Crimson-wings in addition to two fine pairs of Red-sided Eclectus. All the eight species of Rosellas were present with the exception of the Tasmanian Green. A small flock of ten Pileateds were as wild as is usual with this species, but in fine condition. All the Australian Ring-necks (*Barnardius*) were there, including five of the rare Cloncurry, four of these having been bred in my own aviaries. The smaller Parrakeets were by no means com-

plete, but I remember noticing Blue Bonnets, Many-colours, and Red-rumps, Bourke, Elegant, and Rock Grass-Parrakeets, and, of course, Budgerigars. Of the true Parrots there are nearly twenty Amazons of five different species, including two that I do not recall having previously seen. A single African Grey and a very tame Red-vented Parrot are also amongst those present. The Asiatic Parrakeets include the Alexandrine, Indian Ring-neck, Javan, and, I think, the Malabar. There was a single example of the Black-headed Conure and the only Lorikeets were several Red-collared. I think that concludes my recapitulation of a very wonderful collection of the larger Psittacidæ. I should perhaps mention that Mr. Hallstrom has been a most generous benefactor of Taronga Park Zoo in recent years, and has recently become a member of the Avicultural Society.

* * *

QUETZALS

By J. DELACOUR

The magnificent Quetzals which Mr. C. Cordier brought to New York last year have lived perfectly well. We kept three pairs at the Zoo. One hen died six months ago of an old complaint undoubtedly contracted in Costa Rica, but all the others are in excellent condition ; they have moulted out already twice ; their colours, including the wonderful scarlet under parts, are as bright as ever. In short, they have given us no trouble at all. We feared the heat of the New York summer would be too much for them, and we have had in 1943 the bad luck of an exceptionally hot season, but they never seemed to mind it in the least.

Each pair is kept separate—two pairs would fight—each in one of our new large indoor planted flights, in company with Humming-birds, Sugar-birds, Tanagers, Manakins, Thrushes, Doves, etc., the odd male shares another cage with similar birds. The Quetzals have proved so far completely harmless to them, and they do not damage the vegetation either. Mr. Cordier collected some very interesting information in Costa Rica about these beautiful birds, and I hope that the following pages, reproduced from *Zoologica*, xxviii, pp. 105 and 106, may interest our readers :—

A RECORD OF THE SUCCESSFUL BREEDING OF THE QUETZAL (*Pharomachrus mocinno costaricensis*) IN CAPTIVITY

CHARLES CORDIER

In March, 1942, I had the good fortune to meet in San José, Costa Rica, Señora Amparo Zeledon, widow of the well known ornithologist who died a few years ago.

At that time I was starting on a collecting trip having as its objective the capture of the Bare-necked Umbrella Bird (*Cephalopterus ornatus glabricollis*) and other rare birds for the New York Zoological Society.

It was with considerable elation that I noticed at Señora Zeledon's home a large well-planted aviary, approximately 30 ft. by 15 ft. by 10 ft., in which was a pair of Costa Rican Quetzals, *Pharomachrus mocinno costaricensis*, in superb condition. The male trailed behind in its flight a pair of upper tail coverts nearly a yard long. Subsequently I was able to purchase this pair and the birds are now (February, 1943) on exhibition in the New York Zoological Park, together with several other Quetzals.

The most interesting part of my discovery was that Señora Zeledon told me that the Quetzals had reared young successfully on two occasions and that she had made notes of these events at the time. She was kind enough to lend me her notes, which I have translated and reproduced herewith:—

“ We noticed the young bird peeping through the entrance hole on 8th August, 1940, and on the 12th it left the nest.

“ Both male and female were feeding it as long as it was confined to the nest, but once outside, only the mother cared for it, feeding it earthworms (Of all things—Translator) in the morning, and fruit (By which is meant cut-up little plaintains known locally as ‘ guinea ’—Translator). On the 16th of the same month it fed itself for the first time. I suppose the birds started nesting at the end of June.

“ The tree trunk in which they nested had been in the aviary for more than two years, exposed to the weather, before they showed any interest in it, the male preferring to enter a bigger, irregularly-shaped hole in the wall forming one side of the aviary. The female, however, would only reluctantly go near it, the entrance hole probably being too wide. Fortunately they decided on nesting in the tree trunk after two long years, the wood having become soft enough to be worked on by them.

“ The male moulted at the end of August and lost its long tail coverts at the end of September.

“ The plumage of the young bird at the moment it left the nest was uniform coffee-colour, except the wing coverts which were green.

“ Both parents had been kept for three years in the big aviary and previously for two years in a much smaller aviary in which they would get very wild as soon as approached. In the big enclosure they are quite steady and take no notice of visitors. The pair was composed of a young male and an adult female purchased from the natives.

“ February, 1941 : The male, already in good plumage, started to enter the nest in the middle of February and to clean it out, carrying loads of dust in his breast feathers which he would shake out, once outside. Both started uttering their calls and the female entered the

nest some days later, mornings and afternoons. Both adults started chasing the young Quetzal from the vicinity of the nest and stayed continuously near it, even in March.

"On 31st March, 1941, I noticed the female coming out of the nest to let the male get in. Shortly afterward the male came out and the female re-entered.

"19th April: To-day I had the gardener trim the trees in the aviary, and he noticed two young birds in the nest, maybe eight days old.

"Five days later we found a dead young Quetzal on the ground. One side showed signs of having been injured. Possibly the birds got frightened when the gardener worked in the aviary and threw one of the nestlings out.

"The young Quetzal, reared the previous nesting season, is still being relentlessly persecuted by its parents. On Friday, 2nd May, they bit it almost to death. I took it out, did my best to cure it, but found it dead the following day. I had made the mistake of putting it back in the aviary. Even when it was lying dead on the ground the female would swoop furiously down on it.

"On 12th May, 1941, this season's young Quetzal could be seen at the nest hole. It left the nest on 18th May, early in the morning. Male and female re-entered the empty nest several times that day."

On discussing the birds' performance Señora Zeledon said she believed she knew why the Quetzals waited two years before nesting. She thought the wood in the tree trunk was too hard and they could not work it and shape it to their liking. In 1942 she had the old tree trunk replaced but no attempt at breeding was made, the wood probably again being too hard.

I measured the old trunk and found it to have a diameter of about 12 to 13 inches. The nesting hollow was approximately 9 inches in diameter. At the bottom was a shallow cup hollowed out, leaving a rim all around of a width of about 2 inches. The lower rim of the entrance hole, almost 5 inches in diameter, was about 6 inches from the rim of the cup.

Any future attempt at breeding should take into consideration the condition of the log, which should be so well rotted throughout that bits can be pried off with the fingernail, and should have an entrance hole and nesting cavity smaller than the measurements given above. The birds will accommodate it to their liking themselves. It would also be a good plan to wet the log thoroughly from the outside, with a hose, daily, to reproduce natural conditions.

Quetzals breed in cloud forests which are dripping wet almost the year around. While in Costa Rica I found two nests at an altitude of 4,000 feet. One was located deep in the cloud forest in a tree stump about 15 feet tall, so rotten that it swayed when a finger was pressed

against it. The diameter of the stump was at most 9 inches, which goes to show that occasionally the Quetzal takes to cramped quarters. The entrance hole was about 12 feet from the ground. I caught the male, who was brooding inside, by walking noiselessly up to the nest and covering the hole with a butterfly net on a short pole. This was in the month of June.

The second nest was situated in an enormous tree trunk, charred by fire and standing in a clearing. The entrance hole was a good 20 feet from the ground. The native who climbed up to it risked his neck by doing so. The nest was deep. He brought up two eggs, the size of pigeon's eggs, uniformly blue in colour. He replaced them but the birds abandoned the site. The natives said that they invariably do this when the eggs have been touched.

At first I thought the Quetzal lives in association with the Great Woodpecker, whose abandoned nest he would take over and accommodate to his liking, but later I was not so sure of this. Quetzals breed up to 10,000 feet and at the higher levels the big Woodpecker is not found, being replaced by a medium-sized Woodpecker, so that the Quetzal would have to accommodate a much smaller nest.

Despite the Quetzal's diminutive feet and short bill, he must be a good carpenter. I once observed in Guatemala a Red-bellied Trogon hollowing out, with feet and bill, an occupied termite nest, and these are quite hard.

* * *

NOTES

A LONG-LIVED RUFIOUS-BELLIED THRUSH

I thought it might be of interest to put on record a few particulars of a very old friend, who has just died. My Rufous-bellied Thrush (*T. rufiventer* or ? *fumigatus*) was, I understand, one of the first if not *the* first of his species to be bred in captivity in England. He was hatched in my friend's (the late H. V. Johnson) aviary at Formby, Lancs, on 29th July, 1926, he died at the ripe old age of 17 years and 5 weeks, on 8th September, 1943, and was in perfect health to within a few days of his death. During the seventeen years I had him he has lived outdoors, among a varying collection of both Foreign and British birds. He had no special diet and very little live insect food, except what he was able to find for himself in the aviary. He was a fine singer and very well behaved towards his aviary companions, which over his long sojourn with me, consisted of a large variety of birds, from small Finches upwards. It is with a real sense of loss that I report his "passing on".

THOS. L. S. DOOLY.

STALINGRAD HOSPITAL LABORATORY FUND.

The President, Mr. A. Ezra, sent a donation of £5 on behalf of the Avicultural Society to the above Fund and an appreciative letter of thanks has been received from the organizers.

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